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Factors influencing environmentally responsible investment in the forestry sector: A qualitative examination of Green Resources investment projects in Mozambique.

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Date: 15.05.2023

Abstract

In today's world, striking a balance between economic growth and environmental protection has become a critical challenge for organizations. The United Nations has emphasized the urgent need to address climate change, a threat that poses significant risks to both humanity and the planet. Despite the ambitious targets set for reducing greenhouse gas emissions, current national commitments are insufficient, demanding effective action at all levels to tackle this crisis. Sustainable forestry initiatives have been recognized as crucial for mitigating and adapting to climate change, although concerns have been raised about potential adverse environmental impacts of large-scale forestation efforts. This master's thesis delves into the decision-making processes of corporations and investors, examining how they prioritize environmental responsibility. With a specific focus on Green Resources (GR), a forestry company, the research employs a qualitative methodology to explore the motivations, obstacles, and criteria for investing in the forestry sector in an environmentally responsible manner. The study employs a variety of sources, including interviews, literature, reports, official documents, business reports, and websites, to provide a comprehensive analysis of the intricate nature of environmentally responsible investing, using GR's operations in Mozambique as a case study.

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Acronyms and abbreviations

CCs Carbon Credits

CEO Chief Executive officer

COP The Conference of The Parties

CMD Clean Development Mechanism

CIF Climate Investment Funds

CEO Chief executive officer

ERI Environmentally Responsible Investments

EU European Union

EU ETS European Union`s Emissions Trading System

FAO Food and Agriculture Organization of the United Nations

FSC Forest Stewardship Council

FDI Foreign Direct Investment

GR Green Resources

IFAG International Fund for Agriculture Development

IFC International Finance Corporation

IPCC Intergovernmental Panel on Climate Change

ILRG Integrated Land and Resource Governance

NGR Niassa Green Resources

NORAD Norwegian Agency for Development Cooperation

Norfund Norwegian Investment Fund for Developing Countries

NEFCO Nordic Environment Finance Corporation

NMBU Norwegian institute for environmental studies

NRK Norwegian Broadcasting Corporation

SDG Sustainable Development Goals

UN United Nations

UNDP United Nations Development Programme

VCS Verified Carbon Standard

WBCSD World Business Council for Sustainable Development

Chapter 1: Introduction

1.1 Environmental concerns and Forestry initiatives

The current global environmental crisis, epitomized by the threat of climate change and ecological imbalances, has generated heightened attention towards the role of sustainable forestry initiatives and responsible investment practices in the forestry sector. Attention to the economic benefits of prioritizing environmental efforts is growing along with the implantation of financial instruments such as carbon credits (CCs), leading to a surge in green investment projects worldwide. A March 2023 report by the United Nations (UN) emphasized the urgent need to act quickly to mitigate climate change (IPCC, 2023). The report highlights the importance of forest conservation as a critical strategy to mitigate climate change and protect biodiversity. According to the report, forests are among the most effective carbon sinks and can help reduce greenhouse gas emissions. The preservation of forests offers a plethora of associated advantages, encompassing the protection of vital water resources, the sustenance of soil fertility, and the provision of crucial wildlife habitats (IPCC, 2023). These compelling findings provide a compelling rationale for prioritizing environmentally responsible investments within the forestry sector, emphasizing the necessity of integrating ecological considerations into decision-making processes.

This call for environmental responsibility was further emphasized during a recent government hearing in Norway, which highlighted the significance and intricate nature of responsible environmental investments (Utenriksdepartement, 2023). Norfund, a state-owned development finance institution and one of the main investors in the forestry company under investigation in this study, Green Resources (GR), acknowledged the challenges and protracted nature of its investment in the company. The backdrop of the government hearing was prompted by a series of media coverage and studies highlighting the alleged adverse effects of Green Resources' forestry plantations. Norfund faced criticism for inadequate oversight and control over the company's operations and their impact on local communities and the environment. In response, Norfund expressed a commitment to avoiding similar investments in the future and pledged to review their current mechanisms for monitoring and controlling funding for firms engaged in comparable activities. However, the statement from Norfund lacks clarity as it fails to specify what constitutes "similar activities." Given that Norfund is a development finance institution focused on sustainable projects, it is plausible that they will continue to invest in similar initiatives in the future. This predicament underscores the significance of this study, as both

investors and companies grapple with navigating the ever-evolving environmental demands of the planet and its stakeholders. As sustainability gains increasing importance, a deeper comprehension of the intricate interplay between environmental factors and business operations becomes imperative.

This research aims to analyze GR`s sustainability practices and their environmental impacts, focusing on environmental financial instruments, sustainable forest management practices, and stakeholder engagement. To achieve this, a qualitative research approach will be used to collect and analyze data from various sources, including interviews, literature, reports, official documents, business documents, and website analysis. A case-study approach will be adopted to identify the factors that affect environmentally sustainable investments. Specifically, the study will focus on Green Resources' forestry investments in East Africa, with a particular emphasis on Mozambique. The aim of the study is to gain insights into the motivations, challenges, and standards of sustainable forestry initiatives in Mozambique. Ultimately, the research aims to contribute to a broader understanding of environmentally responsible investments in tree planting activities, thus fostering greater awareness and knowledge in this crucial domain.

1.2 Problem statement

The practice of planting trees to combat climate change has gained significant traction in recent years. A report published in 2021 reveals that the number of tree-planting projects globally surged by 95% from 2003 to 2019, resulting in the planting of 43.7 million hectares of forest during that period. A significant number of these endeavours are in tropical areas. The report highlights that tropical regions are a popular location for tree-planting initiatives due to their potential for combating climate change and protecting biodiversity (Bastin et al., 2021). This surge in tree-planting activities reflects the global interest in afforestation and reforestation initiatives. Despite the increasing attention paid to the forestry sector, there is a lack of comprehensive research on how environmental factors play a role in investment strategies and decision-making processes and the challenges and opportunities associated with responsible investments in the forestry sector. This study aims to gain insights into the key factors driving tree plantation initiatives and exploring how environmentally responsible investments can in the forestry sector can contribute towards the overall goal of mitigating climate change. The research aims to contribute to the existing literature by providing a nuanced understanding of

the challenges and opportunities associated with responsible forestry investments and the role of environmental factors in decision-making processes.

1.3 Research questions

To provide a comprehensive response to the problem statement, this study has formulated research questions that will be systematically addressed and explored throughout the research:

1. What are the primary challenges and opportunities of environmentally responsible investments in forestry plantations?

2. How have Green Resources perceived and prioritized environmental responsibility in their investment choices?

3. How have Green Resource's operations in Mozambique aligned with responsible investments, and what are the current challenges and opportunities?

1.4 Mozambique: Brief country context

Understanding the impact of afforestation and reforestation initiatives in Mozambique necessitates consideration of its history, political system, and environment. These factors are vital for analyzing environmentally responsible investments in the forestry sector. This section provides a brief overview of these factors, highlighting their significance in evaluating such investments.

1.4.1 Mozambique Background

Mozambique is a country rich in natural resources, spanning approximately 799,380 square kilometres. It boasts substantial reserves of minerals such as coal, titanium, natural gas, and agriculture plays a vital role in its economy, with major exports including cashews, cotton, sugar, and tobacco. Additionally, Mozambique possesses significant forestry resources, comprising both natural forests and extensive planted forests. Despite this abundance of natural resources, Mozambique faces significant socio-economic challenges, making it one of the world's poorest nations. Persistently high levels of poverty and inequality pose significant barriers to the overall development and well-being of Mozambique, hindering progress and undermining the welfare of its population. (CIA, 2021). Mozambique is facing various challenges in its quest for sustainable development. Despite having a positive economic

outlook, with an expected growth rate of 6% between 2023 and 2025, Mozambique continues to rank among the world's poorest nations (World Bank, 2022). This is demonstrated by the country's low levels of human development, which were ranked 180 out of 189 countries in the 2019 Human Development Index (HDI) released by the United Nations Development Programme (UNDP, 2019). This demonstrates Mozambique's challenges in attaining sustainable and inclusive growth. It emphasizes the presence of several barriers to the country's progress. These barriers cause significant socioeconomic inequalities and constraints, particularly in critical sectors such as education, healthcare, and overall quality of life. These difficulties underscore the importance of addressing and conquering these challenges on Mozambique's long-term growth and development course.

1.4.2 Fostering Foreign Investment and State Legitimacy through Land Laws

Over the past years, the government in Mozambique has been primarily dedicated to attracting investors, and to support this objective, it has facilitated the implementation of land laws that grant land rights to investors through state leaseholds (Norfolk & Tanner, 2007). In 1997, Mozambique implemented a land-use system called DUATs, an abbreviation for "Direito do Uso e Aproveitamento da Terra," which translates to "Right of Land Use and Enjoyment". This system enabled foreign investors to lease land from the government for a maximum period of 50 years, while prohibiting land purchases (Peters, 2013). The implementation of DUATs was a response to various concerns surrounding land tenure, land use planning, and natural resource management in Mozambique. Prior to DUATs, the lack of clarity and security regarding land tenure often resulted in conflicts over land rights and usage. The DUATs system was established with the aim of addressing these concerns and providing a framework for sustainable land use and management. It sought to achieve this by establishing clear land tenure rights and implementing a system for land use planning and management that actively involved local communities and stakeholders.

1.4.3 Mozambique’s Political Environment

Mozambique's foreign relations have been shaped by its history of colonialism and independence, as well as its geographic location and natural resources (USAID, 2021). The history of colonialism, during which European powers ruled Mozambique, has had a long-lasting impact on the country's relations with foreign nations. Its diplomatic contacts and foreign policy decisions have been impacted by the process of achieving independence and establishing

itself as a sovereign nation. The Mozambique Liberation Front (FRELIMO) has remained in control since independence in 1975 (Kaarhus, 2015). This prolonged tenure of a single political party raises questions about Mozambique's government's level of political diversity and plurality. The dominance of FRELIMO shows that rival political parties have struggled to develop a substantial footing in the political scene, restricting the country's dimensions of political ideas and contestation. This persistent political power, however, lends some stability and predictability to the political scene. Foreign investors may consider the continuity given by FRELIMO's long-standing control as an advantage. A stable political environment provides comfort and reduces the risks associated with abrupt policy changes or political upheavals. Such stability can generate a favourable climate for long-term investment planning and implementation. Furthermore, the government has implemented various measures to attract investment, including tax incentives and a new investment law that offers foreign investors greater protections. However, Mozambique still faces significant challenges, particularly when it comes to infrastructure, corruption, and political instability, which can hinder foreign investment (USAID, 2021). While Mozambique offers opportunities for economic growth and development, it also provides some challenges that must be properly addressed.

In the case of Mozambique, anthropologist Lars Buur (2008) asserts that the Mozambican state has confronted significant challenges in gaining legitimacy and recognition from its citizens, particularly in rural areas. These challenges can be attributed to the enduring influences of colonialism and the subsequent civil war. Buur's analysis not only delves into the impact of historical factors but also explores the role of civil society in advocating for democratic practices and good governance in Mozambique. By shedding light on the intricate obstacles faced by civil society, Buur highlights the need to navigate a complex landscape to strengthen their engagement and influence. Building upon Buur's insights, economist Tarp (2013) emphasizes the importance of active participation by African countries in shaping their development agendas and policies. Tarp underscores the significance of strengthening local institutions and governance structures as vital components for promoting sustainable development. By bridging the gap between Buur's exploration of state legitimacy and civil society engagement, Tarp's perspective reinforces the imperative for Mozambique and other African nations to prioritize self-determined development trajectories and cultivate robust local foundations to drive long-term socio-economic progress. Understanding the intricate interplay between natural resource wealth, poverty, and the forestry sector in Mozambique is essential. It serves as a foundation for evaluating the potential impact of environmentally responsible

investments, identifying opportunities for sustainable development, and addressing the socio-economic and environmental challenges that the country faces.

1.4.4 Conservation and Resource Extraction in Mozambique

Mozambique has seen a significant increase in planted forests since 2005, a trend supported by the government's National Reforestation Strategy in 2009, which seeks to increase commercial plantation area to one million hectares by 2030 (World Bank, 2016). This concerted effort aligns with Mozambique's broader institutional approach to development, which has, over the past two decades, facilitated its transformation into an exceedingly alluring investment destination, particularly in terms of foreign direct investment (FDI), aimed at extracting natural resources. This has resulted in the country becoming a hub for resource extraction, providing energy and primary commodities to support industrialization in other regions while increasing imports of manufactured goods and food. Despite the high rates of economic growth attributed to the influx of FDI (Castel-Branco, 2014), the Mozambican economy has failed to achieve its goals of reducing poverty and expanding the social and economic foundation for development. Mozambique has seen an increase in "green" investments and projects, reflecting a worldwide trend toward environmentally sustainable activities. One significant example is the country's approval and implementation of various tree plantation programs. Hanlon and Smart (2011) address the constraints of Mozambique's present development strategy, which is largely focused on obtaining foreign investment and boosting extractive industries. According to the authors this method has resulted in an unequal distribution of resources and benefits, with foreign investors and authorities benefiting more than rural poor. The authors also stress the difficulties of constructing a sustainable and diverse economy in a post-conflict context, where the legacy of war and political instability continues to have an impact on development efforts.

1.5 Opening remarks

As someone who is deeply committed to environmental preservation and sustainability, I feel a significant duty to contribute to the search for solutions to the complex difficulties posed by climate change. I am confident that businesses will play a critical role in addressing these difficulties, with environmentally responsible investments serving as a powerful tool to encourage sustainable development in the coming years. The forestry industry and its potential for tree plantation efforts have piqued my interest as a feasible means of mitigating and adapting to climate change while also supporting socioeconomic growth. My goal in embarking on a

case study focused on Green Resources' forestry activities in Mozambique is to conduct a thorough evaluation of the many characteristics involved with ecologically responsible investments. My goal with this thorough study is to shed light on the numerous complexities inherent in such investments, unravelling both the obstacles and potential they entail. Finally, this endeavour aims to contribute to a better understanding of the complex processes that characterize ecologically responsible investments, with the goal of generating a more sustainable future.

Chapter 2: The Forestry industry in the global South

2.1 Historical overview

During the colonial period, extensive deforestation occurred in many African countries to support large-scale timber harvesting for export to European markets. Even after independence, African countries continued to rely on raw material exports, such as timber, for foreign exchange earnings. The processing and manufacturing of these resources often took place outside the continent, perpetuating a cycle of underdevelopment and overreliance on natural resources. This approach also had severe environmental impacts, including soil erosion, habitat loss, and negative impacts on ecosystems and biodiversity (Achard et al., 2014). The historical viewpoint illuminates the sensitivity surrounding natural resource extraction, stressing its fragility in previous years. The complexity of the land question in Africa, as highlighted by Peters (2013), extends beyond surface-level issues and encompasses a range of intricate factors such as agency, power dynamics, politics, and representations at both national and local levels.

2.2 Landscape of Environmentally responsible Investments in the forestry sector

The history of natural resource exploitation in Africa, including its forests, is a complex and often contentious topic that reflects broader issues of colonialism, globalization, and sustainable development (Büscher & Fletcher, 2019). However, in recent years, many African countries have recognized the importance of sustainable forest management and the potential of the forestry industry to contribute to economic development while preserving the natural environment. The exploitation of Africa's natural resources, including its forests, is a multifaceted issue that requires careful consideration of the past, present, and future. The Global South, comprising developing and emerging economies, presents unique opportunities and challenges for environmentally responsible investments. While there is a growing awareness of the need for sustainable development and environmental stewardship, the landscape of nature-

based investments in the Global South can vary significantly. In recent years, the term "nature-based solutions" has gained prominence in climate and nature negotiations, but it is used differently by different stakeholders. Originally, it referred to the benefits that restoring and conserving nature can bring to human societies. Nature-based solutions capitalize on the ecosystem's capacity to provide a range of services, including carbon sequestration, water purification, natural disaster mitigation, and biodiversity preservation. These solutions leverage the inherent potential of ecosystems, recognizing their ability to deliver multiple benefits to both people and the environment (Henmo, 2022).

Chapter 3: Global Priorities Overview

3.1 Global initiatives for climate mitigation and biodiversity

As green investments continue to gain momentum, it is critical to examine specific initiatives that have been formed to inspire interest in green initiatives within organizations. The approval of the United Nations Framework Convention on Climate Change (UNFCCC) at the 1992 Rio Earth Summit was a historic event in global climate policy (UNFCCC, 1992). The primary goal of this global treaty is to stabilize greenhouse gas concentrations in the atmosphere at a level that reduces the risk of dangerous human intervention in climate systems. Building upon this pivotal moment, numerous initiatives have emerged to align with the overarching goal of reducing carbon emissions and mitigating climate impacts.

3.1.1 The REDD+ Program: Addressing Deforestation and Forest Degradation

Former Norwegian Prime Minister Jens Stoltenberg's bold statement at the United Nations climate convention in Bali still echoes in our minds: "Everybody knows how to not cut down a tree" (Stoltenberg, 2007). Despite the inspiring and clear-cut speech, deforestation remains one of the most pressing global issues, endangering the planet's biodiversity, climate stability, and human well-being. In response to the problem of deforestation and forest degradation, the Reducing Emissions from Deforestation and Forest Degradation Program (REDD+) was introduced in 2005. The development of the REDD+ program stemmed from the recognition of deforestation and forest degradation's significant contribution to carbon emissions. With the aim of providing financial incentives for reducing these emissions, REDD+ seeks to address the environmental and social challenges associated with deforestation while promoting sustainable land management practices (Angelsen et al., 2012). This initiative reflects a multifaceted approach to combating climate change by leveraging financial mechanisms to

encourage forest conservation and emission reduction efforts. The multidimensional approach of REDD+ reflects a broader understanding that solving climate change and addressing the causes and implications of deforestation and forest degradation. REDD+ offers a possible avenue to tackle climate change while encouraging sustainable land management practices and assisting local populations by offering financial incentives for forest conservation and emission reduction activities.

3.1.2 Commitment to Biodiversity Conservation: COP15 and "30x30"

Moreover, the Conference of the Parties (COP15) on biodiversity held in Montreal, Canada, in 2022, stands as a momentous milestone in the ongoing global conservation efforts. The agreement forged at the conference holds a resolute aim to halt and reverse the alarming decline in biodiversity by the end of this decade. A primary objective of this accord, commonly known as "30x30," is to safeguard 30 percent of the world's land and oceans by 2030 (CBD, 2022). Within the context of the research inquiry at hand, Target 10 offers particular significance as it examines the fundamental challenges and opportunities associated with environmentally responsible practices in forestry activities. Target 10 of the agreement explicitly advocates for sustainable forestry management that preserves biodiversity and upholds the functioning of ecosystems. The realization of these political objectives holds paramount importance for the forestry industry, compelling a necessary adaptation towards more sustainable practices. By aligning with these goals, the industry can play a pivotal role in the global conservation of biodiversity and the responsible management of natural resources on a broader scale. It requires the concerted efforts of stakeholders to develop innovative and sustainable approaches that prioritize biodiversity conservation and uphold the integrity of ecosystem services.

This year, in March 2023, the release of a report by the United Nations Intergovernmental Panel on Climate Change (IPCC) marked a significant turning point in highlighting the urgency of coordinated action to address the global climate crisis (IPCC, 2023). The report is widely regarded as a "survival guide" rather than a mere compilation of potential solutions, emphasizing the imperative for the private sector to adapt its practices and actively contribute to climate change mitigation efforts. This acknowledgment underscores the crucial role that businesses, including the forestry industry, play in combating climate change and underscores the need for transformative actions and long-term sustainability measures.

3.2. Tree plantations

In this section, we will delve into the essence of tree plantations, their significant contributions to climate change mitigation, the effectiveness of their practices, and the crucial role of private investments in driving progress in this field.

3.2.1 Tree Planting Campaigns

In recent years, the significance of tree planting initiatives has gained global recognition through prominent campaigns. One influential global reforestation campaign, the Billion Tree Campaign, was launched by the UN Environment Programme (UNEP) in 2006. This campaign has served as a catalyst for encouraging tree planting efforts worldwide. By promoting tree planting as a potent tool for mitigating climate change, improving the environment, and supporting local communities, the Billion Tree Campaign has mobilized individuals and organizations to act. Its impact is reflected in the achievement of surpassing the goal of planting one billion trees, with more than 13 billion trees planted under its auspices as of 2021 (UNEP, 2008). This accomplishment not only serves as a testament to the power of collective action but also highlights the critical importance of securing the environmental outcomes associated with such initiatives. It emphasizes the need for these endeavors to be valid contributions to the broader climate fight. While the significant number of trees planted under these campaigns is impressive, ensuring that these plantations effectively contribute to addressing climate change and environmental preservation is paramount. The success of these initiatives lies not only in the sheer quantity of trees planted but also in the quality and long-term sustainability of the reforestation efforts.

3.2.2 Tree Plantations as a Climate Change Solution

Tree plantations are becoming an increasingly popular solution for reducing and adapting to climate change, with the global area of planted forests reaching 293 million hectares in 2020. Tree plantations, characterized as intensively managed forests predominantly comprised of one or two tree species of equal age and cultivated in a regular pattern to maximize productivity, have gained significant attention as a solution for reducing and adapting to climate change. Eucalyptus, pine, and teak are among the most widely planted species globally due to their fast growth rates and versatility in various Monoculture plantations, characterized by a single tree species planted uniformly across a large area, are prevalent in many tree plantation landscapes. Throughout history, trees have played a crucial role in human societies, providing essential ecosystem services and resources that are crucial to human well-being, such as fuel, building

materials, and medicine (FAO, 2020).The plantations are often established by replacing existing natural vegetation or repurposing abandoned and degraded agricultural land (Pawson et al., 2013). In the case of replacing natural vegetation, it involves clearing the existing vegetation, which may include forests, woodlands, or grasslands, to make way for the plantation of specific tree species. This conversion of land from its natural state to a plantation is often driven by the demand for timber, fuelwood, or other commercial purposes. Tree plantations are commonly viewed as a viable approach to meet the growing need for timber and fuelwood while simultaneously tackling human-caused carbon emissions (Tölgyesi et al., 2022). With the growing global population and expanding economies, there is a greater need for these renewable resources to support various industries, construction, and energy production. One of the key advantages of tree plantations is their ability to provide a consistent and sustainable supply of timber and fuelwood. By cultivating specific tree species in managed plantations, it is possible to optimize growth rates and harvest cycles to meet the demand (Tölgyesi et al., 2022; Pawson et al., 2013).

3.3 Insights from "Seeing Like a State" by James C. Scott

In the field of forestry management, the concepts of standardization and simplification have garnered significant attention due to their implications for decision-making processes and the overall effectiveness of forest management practices. “Seeing Like a State" is a book by James C. Scott (1998) that explores how states attempt to simplify and standardize their societies, and the consequences of these efforts. He highlights the dangers of state-driven simplification and standardization, arguing that state projects often impose a simplified, rationalized view of society that ignores the complex, messy realities of human life. He also introduces the concept of "high modernism," a belief in the ability of experts to plan and control society, which emerged in the early 20th century. High modernism is characterized by a focus on scientific rationality, standardization, and the creation of legible systems. Scott argues that high modernism had a transformative impact, attempting to impose a uniform model of society onto diverse, complex social and ecological systems. This resulted in a loss of local knowledge and practices, as well as unintended consequences and resistance from those who were affected by modernist policies (Scott, 1998., pp.1-51).

In the context of tree plantations in the global south, "Seeing Like a State" provides insight into the potential consequences of state-driven simplification and standardization in forestry management. The book's critique of high modernism highlights the dangers of imposing a

uniform model of forestry management on diverse ecological systems. Such an approach may lead to a loss of local knowledge and practices, unintended consequences, and resistance from those affected by the policies. As tree plantations in South Africa are often established for commercial purposes, there is a risk that the focus on economic efficiency may overshadow the importance of maintaining diverse and adaptive social and ecological systems. Scott's call for recognition of the value of local knowledge and practices is particularly relevant in the context of South Africa, where indigenous communities have traditional knowledge of forest management that could contribute to sustainable forestry practices. By embracing diverse perspectives and local knowledge, it may be possible to develop a more sustainable approach to tree plantations in South Africa that acknowledges the complex realities of human life and the environment.

3.4 The role of private investments in Tree Plantations

In recent years, the African plantation sector has undergone tremendous restructuring, with a visible spike in private investments prompted by environmentally friendly incentives. Foreign direct investment (FDI) is frequently sought after by nations in the global south because it is recognized as a potential engine of economic advancement, modernization, income growth, and job creation (OECD, 2002). This tendency has been accompanied by a significant increase in the size and scope of land ownership by foreign individuals or corporations. According to Zoomers (2010), the ownership of land by foreign entities has increased dramatically, indicating a shift in the dynamics of land management and utilization within the region. This changing terrain reflects the complex interplay of global economic pressures, local development objectives, and the pursuit of prosperity. While studies have consistently demonstrated a positive correlation between FDI and income growth, researchers have also shed light on the potential adverse consequences, particularly in the realms of social and environmental development (Reiter and Steensma, 2010). As the demand for timber and forest products continues to rise, private investments play a crucial role in the expansion of tree plantations. However, there has been a growing trend in recent years towards private sector investments that prioritize sustainable practices, aiming to strike a balance between economic profitability and environmental and social responsibility. This presents a significant challenge for companies operating in the plantation sector, as minimizing the environmental impacts of tree plantations becomes a crucial consideration. In this context, it is essential to explore the complexities and strategies associated with ensuring the sustainability of tree plantations while addressing the environmental challenges they may pose.

Chapter 4: Carbon Credits as a tool for climate change mitigation?

4.1 Background

The concept of carbon credits (CCs) originated from the Kyoto Protocol (1997); an international treaty designed to combat global warming through the reduction of greenhouse gas (GHG) emissions. The protocol introduced the concept of carbon trading, enabling countries to trade permits that allow them to emit GHGs. In turn, this approach created incentives for emissions reductions. Over time, the utilization of CCs has expanded as a mechanism for climate mitigation and promoting sustainability outcomes. The European Union's Emissions Trading System (EU ETS) stands as a significant example of the global acceptance and implementation of carbon markets (Ellerman & Buchner, 2007). As the world's largest carbon market, the EU ETS has successfully established a comprehensive framework for emissions trading within its member states. This system encompasses various sectors, including power generation, manufacturing, and aviation, reflecting its wide-ranging coverage and ambition to mitigate greenhouse gas emissions. Through the EU ETS, participating entities are allocated emission allowances, which can be traded to achieve emissions reductions in a cost-effective manner.

4.2 The use of Carbon Credits

The use of carbon credits is one relevant aspect to consider when investigating ecological value in tree plantations, and specifically in the case of GR. The REDD+ programme incentivized developing countries to reduce their carbon emissions from deforestation and forest degradation by providing financial incentives. Carbon offsets, which allow forest conservation and reforestation, are one of the mechanisms in REDD+ programs. This sparked the attention of policymakers and investors worldwide, leading to the imitation of several REDD projects in the Global South (Angelsen et al, 2012). Carbon credits have become an important part of the climate finance landscape and can also be seen as an important contribution of GR´s business model and sustainability agenda. Therefore, it is important to gain understanding of the broader debate around the effectiveness and the environmental justification of carbon offsetting projects. Carbon Credits involve certification, verification, and trading, facilitated by voluntary and regulatory programs that aims to ensure that the integrity of Carbon credits. (Purohit et al, 2021; Widerberg et al, 2020).

4.2.1The Effectiveness of Carbon Credits as a Climate Solution

The use of carbon credits as a tool for climate mitigation and sustainability has generated significant debate. Since the very essence of carbon credits is based on additionality, the

question of what brings about such an outcome is up for debate. In the context of carbon offset projects and carbon credits, "additionality" refers to the requirement that the emission reductions achieved through the project would not have occurred in the absence of the project. While governments and businesses have promoted carbon credits as a mechanism for reducing global GHG emissions, environmentalists have raised objections to the mechanism. One key objection is that carbon credits may enable organizations to continue emitting GHG rather than achieving meaningful emissions reductions in their own operational cycle. Establishing a market for emission through CCs can create opportunities for corporations to manipulate or exploit the system, resulting in a net increase in emissions (Calel, 2011). Carbon offset projects are also primarily located in the Global South, raising bigger concerns about potential social and environmental injustice that can occur as a result. While acknowledging that CCs have increased the attention from private institutions and the implementation of more green investments in recent years, scholars highlight the complexity of the issues involved. Benjaminsen and Kaarhus (2019) warn against unintended consequences such as land grabbing, social conflicts, and local community marginalization. Büscher (2014) also argue that market-based mechanisms such as carbon credits in conservation and development projects can have negative consequences, including the commodification of nature and the displacement of local inhabitants. Therefore, conducting a critical investigation of the underlying power relations and beliefs that drive market-based carbon credits is essential.

4.2.2 Caution and evaluation

Implementing a carbon project in Mozambique presents both risks and benefits. On the one hand, such projects have the potential to generate revenue for local communities and provide incentives for sustainable land use practices**.** One risk is that carbon projects may lead to land grabbing and displacement of local communities. Furthermore, In Mozambique specifically, there are also institutional challenges to implementing carbon projects. The country has a limited capacity for monitoring and verifying carbon emissions, which could hinder the effectiveness of carbon projects (Sunderlin et al., 2014). In the context of carbon credits, the Malonda Plantations is an example of the potential negative impacts of offsetting projects in developing countries. The company reportedly used carbon credits to finance its operations, with the promise of reducing emissions through sustainable forestry practices. However, given the company's track record of environmental destruction, there were concerns that the carbon credits it received did not represent the real emissions reductions. Moreover, there were

concerns that the offsetting projects may have had further negative impacts on local communities and ecosystems. The case of Malonda Plantations underscores the need for greater scrutiny and regulation of carbon offsetting schemes to ensure that they deliver real emissions reductions and do not perpetuate environmental and social injustices. It also highlights the importance of ensuring that companies operating in Africa prioritize the well-being of local communities and ecosystems and are held accountable for any negative impacts they may have (Mbanze, 2022).

While CCs may appear to be a promising way to support nature-based initiatives, caution must be taken to prioritize a diverse perspective. To effectively address the issue of CCs and their role in sustainable initiatives, it is important to highlight the weak regulatory framework that exists today. Scholars argue that there are legal and regulatory challenges associated with implementing carbon projects, such as unclear property rights and regulatory frameworks (Corbera et al., 2009). Currently, there is significant variation in the way CCs are operated and how their calculations are presented. This lack of standardization leaves significant room for interpretation, which in turn creates significant challenges for ensuring quality. Furthermore, the lack of effective enforcement procedures and penalties to guarantee that firms comply with carbon credit criteria exacerbates the problem. The regulatory framework for carbon credits' difficulties can be placed within the larger context of current climate politics. Despite the proliferation of projects and goals stated, there is a lack of clear guidance and thorough data to ensure the meaningful and successful achievement of these objectives.

Chapter 5: Conceptual Framework

The Green Modernization framework was selected as the appropriate framework for this study due to several reasons. Firstly, it emphasizes the significance of environmentally responsible investments as a crucial catalyst for sustainable development. Secondly, it provides a valuable perspective to examine the challenges and opportunities in the forestry sector, especially in relation to tree plantations for climate mitigation.

5.1 The Evolution Towards Green Modernization

Modernization theory is a widely used and influential perspective in development studies, explaining the process of societal development and transformation in non-Western countries. It suggests that societies progress through stages, moving from traditional to modern forms of

social, political, and economic organization. According to Eisenstadt (1978), modernization is a historical process that entails transformative changes in social, economic, and political systems, often resembling the trajectory of Western Europe. Over time, modernization theory has evolved and adapted to incorporate environmental concerns, leading to the emergence of green modernization theory. Green modernization builds upon the foundations of traditional modernization theory but incorporates a greater emphasis on environmental sustainability. The transition from traditional to modern forms of organization in societies was initially focused on economic growth, industrialization, and urbanization. However, as the environmental challenges and consequences of these processes became increasingly evident, scholars and practitioners recognized the need to integrate ecological considerations into the development discourse. David Pearce (1990) is a British economist who has published widely on the economics of sustainable development and the importance of policy interventions to promote environmental protection. He is a pioneer in the subject of ecological economics. Pearce has been a strong advocate for employing market-based instruments to achieve sustainable development goals. He has highlighted the effectiveness of market mechanisms, such as carbon pricing, in creating economic incentives for businesses to reduce their environmental impact. His work has underscored the role of market-based interventions in promoting environmental protection and ensuring the long-term sustainability of economic activities (Pearce, 1990).

5.2 Green Modernization: Balancing Economic Growth and Environmental Protection

In the last decade, there has been a growing interest in the Green Economy (GE) concept in both academic and policy-making circles. This has resulted in the development of international programs across various industries and has influenced national agendas worldwide. According to UNEP, the green economy`s main goal is to promote economic growth and investment while improving environmental quality and inclusion. A green economy prioritizes low carbon emissions, efficient use of resources, and social inclusivity (UNEP,2011) Green modernization is a part of the transition to a green economy. It involves transforming and modernizing the economy to become more sustainable and environmentally friendly, through investment in environmental technology and green solutions that reduce greenhouse gas emissions and protect the environment. Market mechanisms, such as taxes or emissions trading, can create economic incentives for businesses to reduce their environmental impact. Moreover, Public-private partnerships can facilitate cooperation between government and industry to develop sustainable solutions. By combining these approaches, green modernization theory seeks to promote economic growth while reducing the negative impact on the environment (Kivimaa & Kern,

2016). Bergius and Buseth (2019) argues that green modernization can be a key to achieving a green economy. Green modernization theory emphasizes that economic growth can be achieved while also addressing environmental problems, with technological innovation playing a key role in achieving this. Specific rules and regulations are necessary to encourage environmentally friendly actions, as outlined by the theory. Here are some examples of such rules and regulations:

1. Emissions regulation: Green modernization theory emphasizes the need to regulate emissions of environmentally harmful substances, such as carbon dioxide and other greenhouse gases, and to provide economic incentives for businesses to reduce their emissions.
2. Energy efficiency legislation: The theory highlights the importance of having legislation in place to encourage increased energy efficiency in both the public and private sectors, such as through requirements for the use of energy-efficient building materials and technology.
3. Support for green technology: green modernization theory argues that it is necessary to provide support and incentives for the development and use of green technology, such as solar panels and wind turbines.
4. Taxes on environmentally harmful products: The theory proposes the use of taxes and other economic incentives to discourage the use of environmentally harmful products and to encourage the use of more environmentally friendly alternatives.
5. Green jobs: green modernization theory emphasizes the creation of new green jobs, such as those in renewable energy and sustainable agriculture.

These rules and regulations can encourage more environmentally friendly actions and technological innovation that can help address environmental problems.

5.3 The Role Tree Plantations in Green Modernization

Scott (1998), as mentioned previously argue that modern states and sciences tend to simplify and standardize complex systems and processes to make them more efficient and controllable. This can also apply to forest plantations, where modern plantations are often planned and managed in a way that favors economic benefits. Tree plantations can be seen as aligned with the objectives of green modernization, which aims to promote social, environmental, and economic performance through green investments. However, it is crucial to assess the climate impact and sustainability outcomes of these initiatives to determine their true contribution to

the potential of green modernization. Green modernization also emphasizes the adoption of technological solutions to enhance process management, but implementing such technologies in African nations can be challenging due to limited resources and infrastructure. The term "state capacity" is commonly used to suggest that emerging countries may have constraints in their ability to make technical decisions, in contrast to more economically advanced regions. This discrepancy can be observed in several aspects: the personnel in developing nations may have insufficient training and expertise, their access to modern equipment may be restricted, and their budgets tend to be considerably smaller (Haslam et al, 2017). It is important to critically evaluate the climate accounting of tree plantations to ensure that they are delivering the desired environmental outcomes. Factors such as the choice of tree species, management practices, and the potential trade-offs with natural ecosystems need to be carefully assessed to determine the overall sustainability of these initiatives. Thus, while afforestation and forest management may be part of modernization processes, there is a risk of simplifying and standardizing complex ecological and economic systems. It is crucial to consider local knowledge and ecological diversity when planning and managing forest plantations and to balance economic, ecological, and social considerations to achieve sustainable forest management (Angelsen et al., 2014).

Chapter 6: Methodology

The upcoming chapter will outline the methodology employed in this thesis. It will provide a comprehensive explanation of the chosen research design, justify the selected outline, and structure, and offer a detailed account of the data collection process. Additionally, the chapter will address the data analysis methods utilized, assess the research's overall quality, and discuss any significant ethical considerations associated with the study.

6.1 Research Design

When embarking on a research project, the initial step involves determining the research design and structure. According to Saunders et al. (2019), the choice of research design entails creating a plan for executing the project and should outline the methodological approaches that will be employed to address the research question. The primary objective is to select a research design that yields valuable insights into the area being studied. In the field of social science methodology, a distinction is made between quantitative and qualitative methods. Quantitative data refers to information that is quantified or expressed in numerical form, while qualitative

data consists of information that is described or conveyed through words (Ghauri & Grønhaug, 2005). The choice of research methods ultimately hinges on the problem statement of a research paper. This thesis aims to examine the challenges and opportunities of environmentally responsible investments in forestry plantations, particularly focusing on Green Resources' operations in Mozambique. The research questions address the primary challenges and opportunities of such investments, Green Resources' perception and prioritization of environmental responsibility in investment choices, and the alignment of their operations with environmentally responsible investments.

6.1.1 Applying a case study approach.

Andersen (2013) argues that case studies are a valuable research method for exploring complex social phenomena in a real-world context. According to Andersen, case studies allow researchers to examine the interplay between different factors and gain a deep understanding of the context and circumstances in which a particular phenomenon occurs. Furthermore, Andersen notes that case studies are particularly useful for exploring phenomena that are difficult to observe or measure through quantitative research methods. The importance of using multiple sources of data in case studies is also highlighted, such as interviews, documents, and observations. This approach allows researchers to triangulate their findings and gain a more comprehensive understanding of the phenomenon under investigation. This research employs a case-study approach to investigate the environmental impact of Green Resources' Forest plantation projects in Mozambique, with a particular emphasis on analyzing their decision-making processes. The case study design involves selecting Green Resources' forestry operations in Mozambique as the subject of analysis, chosen based on the company's commitment to sustainable forestry and the environmental initiatives of their operations.

6.1.2 Navigating Limitations and Challenges in Case Study Research

The limitation of many case studies is their inherent specificity, which makes it challenging to generalize findings and apply them to other contexts. The unique characteristics and complexities of individual cases may not fully represent the broader population or provide a comprehensive understanding of the phenomenon under investigation (Bryman et al., 2016, pp. 59-61). In my case study, I encountered the challenge of managing a large amount of information spanning an extended period while investigating my research questions. To address this challenge, I employed various structural approaches such as coding, figures, and tabs to organize and categorize the information. These techniques helped me navigate the complexity

of the case and extract relevant insights. Additionally, the limited availability of relevant material posed a significant challenge when conducting the case study. Access to comprehensive and reliable data, documents, and sources related to the specific topic of investigation was limited or scarce, making it difficult to gather the necessary information for a thorough analysis. To ensure a well-rounded analysis, it was crucial for me to select sources representing multiple perspectives on the topic (Bryman et al., 2016, pp. 59-61).

To overcome this limitation, I employed a strategy of triangulation by gathering information from both primary and secondary sources. Through interviews, I gained access to official documents that were instrumental in understanding the decision-making timeline and the underlying rationale for those decisions. This approach allowed me to verify and cross-reference information, enhancing the validity and reliability of my findings. Despite the challenges posed by the specificity of case studies and the limited availability of relevant material, careful selection of sources and the use of triangulation can help mitigate these limitations.

6.2 Strategy for data collection

To collect data for this study, a comprehensive strategy incorporating multiple data collection methods was employed. This included interviews, document analysis, business reports and the utilization of websites. By employing these approaches, a diverse range of insights and information was obtained, ensuring a comprehensive exploration of the research topic.

6.2.1 Interviews

Primary data was gathered through interviews conducted with GR, a stakeholder, and natural scientists. These interviews provided valuable firsthand insights and perspectives on GR's sustainability efforts, carbon sequestration practices, and responsible management decisions. The inclusion of interviews as a primary research method in this case study was a deliberate decision aimed at accessing unique insights and perspectives that may not have been available through other sources. Purposive sampling was employed to select interviewees based on specific criteria relevant to the research question. Participants were chosen for their expertise and experience in sustainable forestry, environmental management, and natural science. I had the opportunity to engage in a conversation with Lars Ekman, a Senior Adviser in the Department for Climate and Environment in Norad. Originally, my intention was to conduct an interview with Ekman, but I soon realized that having an informal discussion with him would

offer deeper insights in this case. During our conversation, he generously shared valuable documents from Norad's archives, which contained stakeholder assessments of GR's (organization name) operations. These documents have proven to be instrumental.

In total, I conducted five interviews, each lasting between 30 and 60 minutes. The interviews were conducted in English and Norwegian and were audio-recorded with the participants' consent (see appendix 2,3,4) During the interviews, I asked open-ended questions to encourage the participants to share their perspectives and experiences related to the research topic. All participants were provided with information about the study's purpose, confidentiality, and their right to withdraw at any time (see appendix 1). After the interviews, I transcribed the recordings and analyzed the data using thematic analysis, which involved identifying and analyzing recurring themes and patterns in the data. After the interviews, I transcribed the recordings and analyzed the data using thematic analysis, which involved identifying and analyzing recurring themes and patterns in the data. After the interviews, I transcribed the recordings and analyzed the data using thematic analysis, which involved identifying and analyzing recurring themes and patterns in the data. Multiple sources were consulted at various stages of the research process. The interviews covered a wide range of topics related to tree plantations and Green Resources' involvement in sustainable initiatives.

6.2.2 News articles, Official Documents and Business Documents

For the secondary data, I used various sources, including company reports, academic literature, government documents, and media reports. To select the documents for analysis, I used a snowball sampling approach, which involved starting with a small number of documents and then using references and citations to identify additional relevant documents. I excluded documents that were not relevant to the research question or that lacked credibility. A comprehensive search was conducted for articles spanning from GR's founding year in 1995 until the present day. Bryman (2016, pp. 506-520) argues that using official documents can provide valuable insights into a range of phenomena, which is the aim of this research. Official documents can offer unique perspectives on social and political issues, as they provide a record of discussions and actions taken by agencies and others involved. However, when using official documents, it was important to consider their sources, as well as any biases or agendas that may have influenced their nature. News articles provided a valuable historical perspective on the evolution of GR, including shifts in public opinion and media coverage over time. The media coverage of GR was a valuable source for this case study. However, it is important to note that

the selection of GR as the subject of this project was made independently and prior to the emergence of the recent NRK articles (NRK, 2023). Moreover, official documents from NORAD`s archives proved to be an invaluable resource in my research. The documents provided a unique window into the decision-making process that took place during the period under investigation, enabling me to gain a deeper understanding of the factors leading up to the investments in GR. Furthermore, the documents provided a rich historical record of the perception of the seen potential and perception of GR from a stakeholder's perspective at the time (Norad, 2011).

Notably, official documents may be biased towards a particular perspective or agenda, and not provide a complete picture of the situation as they may exclude or manipulate the information presented. Moreover, when using archival material, Bryman (2016, pp. 498-506) suggests that researchers need to act with caution to ensure that they are properly preserving and organizing the material. Given the intense public scrutiny that GR has faced over the years, investigating news articles was an important aspect of painting a comprehensive picture of the factors that have been subject to criticism, as well as the attention that has been paid to such projects over time. To ensure transparency and replicability of the research process, I documented the search terms and databases used to identify the relevant sources. I also recorded the date of access for each document to ensure that the information was up to date. During the selection process, some documents were excluded from the analysis due to their lack of relevance or credibility. For example, some news articles lacked sufficient evidence or were biased towards a particular perspective, while some academic articles were outdated or did not cover the specific aspects of the research questions. Overall, the selection of secondary data sources was a critical aspect of the research process and required careful consideration of the sources' relevance, credibility, and potential biases. The documentation of the selection process helped to ensure the transparency and rigor of the research methodology.

6.3 Data collection

In this section, the study will investigate the interpretation of collected data, assess the validity and reliability of the findings, examine the limitations of the research, and address important ethical considerations.

6.3.1 Interpretations of data collected.

The Chief Executive Officer (CEO) of Green Resources, Hans Lemm, provided his response in written form. This was his preferred method, which allowed for detailed information from his part, and it provided me with contextual professionally written answers. While for the other interviews, I manually transcribed them. This approach allowed me to gain better understanding of the interviews and avoid errors that can potentially occur when using software programs. Bryman (2016) discusses different methods of data collection and analysis, including interviews and coding. He emphasizes the importance of identifying key themes and patterns in interview data, and the need to develop a coding scheme that reflects the research questions and objectives. I identified recurring themes and similar answers in the data. Once the recurring themes were identified, I categorized them into broader themes and categories. This process allowed me to better organize the data and identify key trends that emerged from the interviews.

6.3.2 Validity and reliability of the findings

To ensure the validity and reliability of the findings, I employed triangulation. This involved comparing the interview data with other sources of data. By doing this, I was able to verify the consistency and accuracy of the information gathered from the interviews and ensure that the findings were reliable (Bryman, 2016, p.556). This approach also allowed me to gain a more comprehensive understanding of the research topic by examining the data from multiple angles.

6.3.3 Limitations

It is important to acknowledge that the perspectives obtained from the interviews are subjective and limited to the knowledge and experiences of the individual participants. The viewpoints expressed by the interviewees may not necessarily represent the views of all investors or stakeholders in the field of sustainable forestry and investment. Some of the interview participants had extensive expertise in natural sciences but had limited knowledge about the specific case of Green Resources' operations in Mozambique. This limited understanding of the case may have influenced their perspectives and the depth of insights they were able to provide. Moreover, the availability of informants posed a challenge during the data collection process. Both Norfund and Finnfund, two key investors in GR, were unable to participate in the study, and New Impact Africa was also unavailable for interviews. As a result, the selection of stakeholders was relatively limited, and it was necessary to rely on the information provided by GR's CEO, who generously made himself available for the study. It is important to recognize these limitations and potential biases in the data collection process. While efforts were made to

gather diverse perspectives, the findings may be influenced by the perspectives and experiences of a limited number of participants.

6.4 Ethical considerations

Ethical considerations are crucial aspect of qualitative research, particularly when conducting interviews. In my own experience researching environmentally responsible investments in the context of GR`s forestry operations in Mozambique, I was aware of the importance of upholding ethical standards throughout the research process. One key ethical consideration that I prioritized was obtaining informed consent from participants. I made sure to provide voluntary agreement from participants to take part. While anonymity and confidentiality are important ethical considerations in qualitative research, it is also important to respect the autonomy of participants and their choices regarding the use of their real names, which they all wished for in this case. However, it was still essential to inform the participants about the potential risks and benefits of using their real names in this study (Bryman, 2016). In addition, potential conflicts of interest must be considered when conducting qualitative research. For example, in the case of GR, there may be financial incentives to present the company's sustainability practices in a positive light. To address this concern, I made sure to obtain information from a range of sources, including stakeholders and experts outside of the company, and to critically evaluate the information provided by the company. As with any qualitative research, it is important to acknowledge the limitations of the study and consider the generalizability of the findings beyond the specific context of the case study. In my own research on GR's forestry operations in Mozambique, the findings are specific to the context of the study and may not necessarily apply to other companies or regions. Therefore, caution should be exercised when attempting to apply the findings to other contexts.

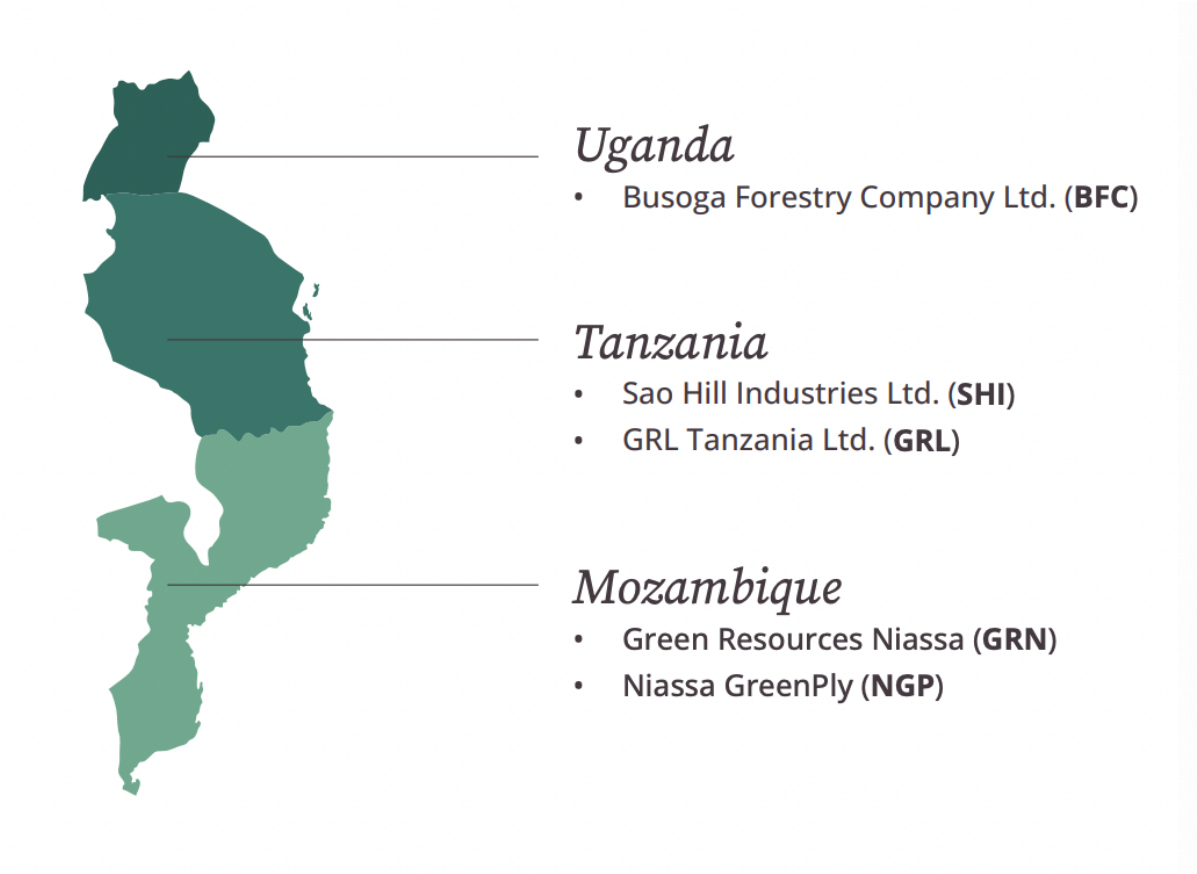
Chapter 7: Green Recourses

This chapter examines the interplay of various factors affecting the company's ability to mitigate negative environmental impacts and promote sustainable practices, including its background, operational framework, expansion into Mozambique, and stakeholder engagement from the funding perspective.

7.1 Green Resources Background

Green Resources is a Norwegian private forestry company that was established in 1995. The company specializes in developing large-scale forest plantations in East Africa, with operations in Tanzania, Uganda, and Mozambique (see figure 1). The company's self-proclaimed aspiration is to establish itself as a sustainable forestry enterprise by promoting the growth of plantation forests throughout East Africa in a manner that is environmentally conscious and socially equitable (GR,2023a). According to their annual report (GR, 2022a), GR manages a landholding of 113,602 ha, with 57,491ha of FSC certified plantations in the countries. The Forest Stewardship Council (FSC) is a non-governmental organization (NGO) that asserts that forest products are produced in a socially, economically, and environmentally responsible manner. The certification process involves an application, assessment, audit, and certification by an FSC-accredited body. An independent auditor conducts an on-site audit to ensure the company meets FSC standards. Companies must renew their certification every five years and undergo periodic audits (FSC, 2023). The FSC is widely regarded as the "gold" standard for wood sourced from sustainably managed forests. It is renowned for its rigorous criteria and is among the most broadly adopted certifications in the forestry industry (Guldbrandsen, 2005).

Figure 1. **Overview over Green Resources operations**



The company is recognized as the largest plantation operator in Africa, having developed large-

scale forest plantations over the years. GR began its operations in Tanzania, where it focused on the establishment and management of forest plantations, as well as wood processing and sales (GR,2023a). Through the establishment of new forest plantations and wood processing facilities, the company increased its capacity for forest management and wood processing operations in East Africa. Notably, GR received the world's first authorization for a forest-based voluntary carbon offset initiative in 2009 from the Verified Carbon Standard (VCS), a global standard for voluntary GHG emissions reduction projects. The initiative involved planting trees in Uganda and Tanzania to absorb carbon dioxide and reduce GHG emissions, while promoting sustainable development by providing employment opportunities and improving access to clean water and energy in the region (VCS, 2009). This study will have a primary focus on the company's expansion into Mozambique, allowing for an in-depth exploration of the complexities surrounding sustainable forest management in the region. Specifically, it will examine the role that GR plays in promoting environmentally responsible investment. The following sections will examine Green Resources' expansion into Mozambique.

7.2 Green Resources expansion into Mozambique

The expansion of Green Resources into Mozambique is directly relevant to the research question of whether the company's operations in Mozambique align with responsible investments and what challenges and opportunities exist. As Green Resources expands into new territories, it is important to investigate how the company is approaching environmental responsibility and sustainability in these new contexts. Additionally, the challenges and opportunities present in Mozambique's forestry industry may have a significant impact on Green Resources' ability to operate responsibly and profitably in the region. In 2009, GR entered into an agreement with the Mozambican government, authorizing the company to lease 1,260 km2 of land in Nampula province (IISD, 2009). Over time, GR expanded its operations in Mozambique, with the company's second-largest asset base located in the Niassa Province of Northern Mozambique. The company manages approximately 13,000 hectares of planted forest in the region today. According to GR the country has the potential to establish plantations that could supply wood for world-scale forest industries. In recent years, GR has increasingly concentrated its operations in Mozambique's Niassa province, while its operations in Nampula and Zambezia provinces are currently placed under care and maintenance until a final decision is made on their future (GR, 2023c).

7.2.1 Green Resources Niassa & GreenPly Limitada

Green Resources Niassa (GRN) is one of the forestry companies under the GR umbrella and operates in Mozambique. GRN was formed in 2020 through the merger of three companies: Chikweti, Niassa Green Resources (NGR) and Floresta Do Planalto (FDP). The company manages 51 DUATS (explained in section 2.1), which are strategically managed as forest plantations, and were acquired in compliance with the relevant national laws of Mozambique. These DUATS are at different stages of processing, including the remaining land holdings that are in the process of being returned to the government as part of land rationalization (GR, 2022b). Niassa GreenPly Limitada (NGP) was established in 2020 and is managed by GRN. CNGP aims to provide manufacturing solutions that optimize financial return by utilizing plantation material available. To achieve this, they have wood preservative treating plants that supply poles for electrification projects in northern Mozambique and the East/Central African region, and a veneer peeler plant producing veneer for plywood production. Pine plantation material is harvested and prepared into optimized sawlogs for supply to a third-party sawmill nearby. NGP is licensed to export and import goods and services and registered with the Investment and Export Promotion Agency APIEX. (FSA, 2023., Agri Malawi, 2022).

7.3 Stakeholder engagement

The engagement of businesses with their external environment, which includes stakeholders, is a fundamental aspect of sustainable business models (Velter et al, 2020). In May 2009, GR signed a loan agreement with the International Finance Corporation (IFC) and Norfund for USD 25 million to support the development of plantations and industrial operations in Tanzania. The Loan was given to invest in the value chain and industrial development of the company with the goal of creating jobs (Norad, 2011). This loan, which had a duration of 10 years, stands as the largest ever granted to a private company for investments in Tanzania (IFC, 2009). This is demonstrating GR's financial credibility at the time and reflecting the recognition of its potential for investments in the region. In an official document, the Norwegian Agency for Development Cooperation (Norad) states that it invested USD 7 million in Sao Hill, Tanzania, in 2011, on a "pari pasu" basis with IFC, which invested USD 10 million (Norad, 2011). In the context of this statement, "pari pasu" means that Norad invested an equal amount of money in the Sao Hill project as the IFC did.

Norfund initially served as a lender to Green Resources until 2018, with no plans of actively owning the company. However, now they recognized the need to temporarily assume an active

ownership role in 2018, due to financial difficulties faced by the company (Panorama, 2019). It must be noted that Panorama is a Norwegian online newspaper that covers news from various parts of the world, with a particular focus on international news. Panorama is owned and financed under Norad's budget, which is part of the Norwegian Ministry of Foreign Affairs. Ultimately, Norfund exercised its rights and became a major shareholder together with finish Finnfund (Norfund, 2023a). Finnfund and Norfund demanded that the company relinquish its right to significant portions of the land. This has primarily been implemented in Mozambique (Norfund, 2021). As major shareholders in Green Resources (GR), Norfund and Finnfund, both development finance institutions, play an important role in guiding the company's sustainability practices and promoting stakeholder engagement (Velter et al, 2020). Norfund has stated that its investment in GR has been a challenging engagement for them over many years, and they have expressed that they would not make a similar investment today (Norfund, 2021). According to GR`s Sustainability Report 2016, the company acknowledges these concerns and aims to address them through stakeholder engagement, collaboration with local communities, and responsible management practices (GR, 2017a). Notably, GR operates in various countries, which makes the company's history vary from location to location, complicating efforts to determine an accurate representation. Overall, it could be argued that over the years, GR has received investments from various sources, reflecting a belief in the company's potential to achieve sustainable forestry practices and economic growth.

7.4 Recent years

In this section, the study will delve into the recent developments and changes within Green Resources, focusing on its operations in terms of investments, challenges faced, and future directions.

7.4.1 The Evolving Landscape of Green Resources: Investments, Challenges, and Future Directions

Today, GR remains one of the largest forest plantation companies in Africa, with operations in Tanzania, Uganda, and Mozambique. The company continues to communicate a strong commitment to environmental sustainability and corporate social responsibility. In recent years, Green Resources has repeatedly been mentioned due to its precarious lack of funds, constantly growing deficits, and disputes between investors, founders, and creditors. (Korsvold, 2019., Bohler, 2018., E24, 2019). During COP26 in Glasgow 2021, Norfund, British international investments and Finnfund presented a joint venture with African Forestry Impact Platform

(AFIP). This is founded by the Australian investment firm New Forests, who aims to generate $500 million in the next two to three years to speed the development of sustainable forestry. GR was their first firm, and they say that the company's fortunes have improved since Norfund, and Finfund became majority shareholders in 2019. The CEO of Norfund underlines that “We are very satisfied with the results of this challenging but successful turnaround. With a new owner that can bring both capital and competence, we can create more jobs and a positive impact on the climate.” (Norfund, 2022*).* However, in January 2023, during a government hearing in Norway, Norfund acknowledged that their investment in GR was a challenging long-term commitment and that they do not plan to make a comparable investment in the future. They have pledged to scrutinize the fund's existing control and monitoring systems to avoid funding companies engaged in similar activities (Utendriksdepartementet, 2023). Furthermore, in 2022, Norfund reported a record-high investment of 6.5 billion Norwegian kroner, a rise of over 20% from the previous year. Norfund's director, Tellef Thorlefsson, states in a press interview that the increased investment reflects their commitment to generating employment opportunities, reducing poverty, and mitigating GHG emissions. Furthermore, he adds that this investment aligns with Norfund's broader mission to foster economic growth and development in emerging markets, particularly in Africa (Panorama, 2023).

7.4.2 Norfund's Ownership and Domicile

Currently, Norfund owns 51 percent of the company (see Figure 2) (Norfund, 2022; Norfund, 2021). In the context of business or investment, "domicile" refers to the legal location or jurisdiction in which a company is incorporated or registered. It is the place where the company is deemed to be based and subject to the laws and regulations of that jurisdiction (Norfund, 2020). Norfund chose to establish a legal presence or domicile in Mauritius to take advantage of its favorable tax and regulatory environment, which attracts foreign investors and promotes investment flows (Norfund, 2020). Regulatory restrictions and guidelines imposed by the Norwegian government on Norfund's utilization of offshore financial centers (OFCs), including Mauritius, are highlighted in a Norfund document (Norfund, 2020). These limitations were introduced following a proposal from a public commission, leading to new investment guidelines for Norfund that restricted the use of OFCs and limited investments to countries within the OECD or those with tax or tax information exchange agreements with Norway (Norfund, 2020). However, a tax information exchange agreement between Norway and Mauritius implemented in May 2012 allowed Norfund to resume investing through companies

domiciled in Mauritius, resulting in an upturn in equity investments in sub-Saharan Africa and LDCs (Norfund, 2020). The document sheds light on the role of the Norwegian government in shaping Norfund's investment guidelines and the broader policy framework and considerations influencing Norfund's investment activities and strategies.

Figure 2*: Norfund's ownership percentages in Green Resources as of 2021*

Norfund 25
Report on Operations 2021

Results per investments area / **Scalable Enterprises**

Investment	Country	Investment year	Sector	Instrument	Owner share	Domicile	Committed (MNOK)
Vertical Agro (Sunripe & Serengeti Fresh)	Africa	2014	Crop and animal production	Loans	0%	Mauritius	53.6
Lake Harvest Group	Africa	2013	Fishing and aquaculture	Loans Equity	33%	Mauritius	140.2
ASILIA (African Spirit Group Limited)	Africa	2013	Tourism	Loans Equity	32%	Mauritius	132.8
UAP Properties Limited	South Sudan	2013	Real estate activities	Loans	0%	South Sudan	8.8
Agrivision	Zambia	2012	Agriculture forestry and fishing	Equity	24%	Mauritius	161.6
Across Forest AS	Nicaragua	2012	Forestry and logging	Loans	0%	Norway	1.3
TPS Dar es Salaam	Tanzania	2011	Tourism	Loans	29%	Kenya	5.3
Basecamp Explorer	Kenya	2010	Tourism	Equity	39%	Kenya	36.4
Green Resources USD	Africa	2009	Forestry and logging	Equity	51%	Norway	560.8
Africado Ltd.	Tanzania	2009	Agriculture forestry and fishing	Equity	33%	Mauritius	7.1
European Financing Partners SA	Global	2006	Investment funds	Loans Equity	6%	None	525.9
Afrinord Hotel Investments	Africa	2005	Tourism	Loans Equity	20%	Denmark	25.4

Chapter 8: Analysis of Green Resources

This section will examine the challenges and opportunities associated with environmentally responsible investments within GR's forest plantations. By utilizing the data collected in this study, a comprehensive analysis will be conducted to gain a deeper understanding of GR's operations and their implications for sustainable practices.

8.1 Stakeholder Perspectives on the funding side

As provided by Norad in an official document from 2011, Norad assessed GR and recognized the company's solid reputation for professionalism and effectiveness in Africa's industrial forest development and wood processing industry (Norad, 2011).). GR was commended for its long-term decision-making and early investments in forest planting for carbon binding/storage and carbon credit trading, with positive feedback from local communities in Africa. Norad noted in 2011 that GR's focus on building local expertise had yielded positive results, laying a solid foundation for its recent expansive development at the time, including increased capacity for analysis and planning, and competence in international standards for sustainable management for natural resources and carbon capture (CCs/REDD). From this, it is clear to see that Norad and other stakeholders alike had the perception that GR was a responsible investment opportunity, and that they recognized the professionalism that GR operated with. However, Norad pointed out in a small section in the assessment that GRs ambitious goals sometimes strained available resources during this expansion phase.

A Norwegian environmental organization raised compelling arguments against Norad's evaluation at the time. The organization contends that the evaluation heavily relied on information provided by Green Resources, the very company under scrutiny. This raises concerns about the objectivity and independence of the assessment process. Moreover, local communities residing near the tree plantation have voiced distressing issues such as food shortages and fear of displacement. By discounting these legitimate concerns, the evaluation report appears to overlook the experiences and rights of the affected communities. It could be argued that this assessment of GR called for a more comprehensive and inclusive approach, urging the inclusion of diverse sources of information to ensure credibility and a fair assessment of the impacts and implications of GRs projects at the time (Panorama, 2012).

8.1.1 Insights from Green Resources and Norfund

In an interview, at the present, GRs CEO acknowledges the challenges the company has faced, including the fact that GR acquired too much land at one point, making it difficult to manage and that they believed lead to criticism of the company`s operations. It is relevant to mention Norfund's negative response (see chapter 6) regarding their decision not to make comparable investments in the future. In the report, Norfund stated that they do not plan to invest in commercial tree plantations in Africa due to the complexity and long-term nature of the

investments and the significant risks associated with them. On the one hand, Norfund has expressed satisfaction with their turnaround on investments, while on the other hand, they have stated that they would not make a similar investment in the future due to concerns about sustainability practices.

8.2 Green Resources' Sustainability Agenda

In this section, we will explore the tools employed to assess Green Resources' sustainability agenda, taking a closer look through the lens of an Environmental, Social, and Governance (ESG) framework and utilizing a Life Cycle Assessment (LCA) approach.

8.2.1 ESG Framework as a Tool to Evaluate Green Resources' Sustainability Performance

To date, various methods have been developed and introduced to measure sustainability. In this case, ESG can be a useful method to assess Green Resources' sustainability operations because it provides a framework for evaluating a company's environmental, social, and governance performance. The benefit of this approach is that it enables researchers to identify key performance indicators (KPIs) and metrics that can be used to evaluate a company's sustainability practices in a standardized way (Duuren, 2016). For example, in terms of environmental performance, ESG metrics could include measures such as greenhouse gas emissions, water use, and waste management. Social metrics could include factors such as labor practices, community engagement, and human rights policies. Governance metrics could include measures such as board composition, executive compensation, and corporate governance practices. By using the ESG framework to evaluate Green Resources' sustainability practices, I sought to describe the company's performance across a range of areas, to identify strengths and weaknesses and develop recommendations for improvement. Additionally, the ESG framework provides a standardized way of comparing Green Resources' sustainability performance with that of other companies in the same industry, enabling researchers to benchmark the company's performance and identify areas where it can improve relative to its peers. Overall, the ESG framework provides a useful tool for researchers to evaluate Green Resources' sustainability operations and develop recommendations for improvement.

8.2.2 Life cycle approach

Life Cycle Assessment (LCA) is a valuable tool for evaluating the environmental impacts of GR's forestry activities. LCA considers the entire life cycle of a product or system, from raw

material extraction to disposal or recycling, and considers the environmental impacts associated with each stage. The life cycle approach can be used as a tool to investigate the environmental impact of green investments in the forestry sector, specifically in the context of green modernization (Baumann & Tillman, 2004). By using this approach, the study can assess the sustainability of the production processes and products of forestry companies and identify areas for improvement in terms of resource efficiency, waste reduction, and emissions reduction. Furthermore, the life cycle approach can help the study evaluate the potential trade-offs between economic development and environmental sustainability in the forestry sector. This is particularly relevant in the context of green modernization, where companies are increasingly under pressure to demonstrate their environmental credentials and contribute to the transition towards a more sustainable economy.

8.3 Green Resources' Sustainability Operations

In this section, the study explores the key components of Green Resources' sustainability agenda, highlighting their core values, focus areas, and the transformative actions they undertake to achieve their sustainability objectives.

8.3.1 Insights from the Latest Sustainability Report and Alignment the SDGs

GR`s latest Sustainability Report (GR, 2022c) provides an overview of their sustainability practices for the previous fiscal year (July 2021-June 2022), centered around sustainable forest management, carbon sequestration, community engagement, and environmental and social impact assessments. The company conducts environmental impact assessments in line with international standards, such as the International Finance Cooperation`s Performance Standards identify and address potential negative impacts. The IFC, as part of the World Bank Group, aims to promote sustainable private sector investment in developing countries (IFC, 2023). Forestry-related World Business Council for Sustainable Development (WBCSD) core and supported SDGs are the company`s focus, WBCSD is a global network of businesses committed to sustainability, with a mission to accelerate the transition to a sustainable world. The council has developed a set of cores and supported sustainable development goals (SDGs) for the business community to strive for, including SDGs that are relevant to the forestry sector, such as responsible consumption and production, climate action, and life on land. As a member of WBCSD, Green Resources aligns its sustainability practices with SDGs. Green Resources' operations align with several core SDGs defined by the WBCSD as well as additional

supportive SDGs. The core SDGs (see figure 3) include SDG 6 (Clean Water and Sanitation), SDG 7 (Affordable and Clean Energy), SDG 8 (Decent Work and Economic Growth), SDG 12 (Responsible Consumption and Production), SDG 13 (Climate Action), and SDG 15 (Life on Land). In addition, Green Resources also supports SDG 1 (No Poverty), SDG 4 (Quality Education), SDG 5 (Gender Equality), SDG 9 (Industry, Innovation, and Infrastructure), and SDG 11 (Sustainable Cities and Communities) (GR, 2022c). To contribute to these SDGs, Green Resources has set concrete targets and outlined key actions in its 10-year sustainability agenda.

Figure 3: *Green Resources Sustainable Development Goals*

Source: https://www.greenresources.no/wpcontent/uploads/2023/01/GRAS_Sustainability_Report_2022_web.pdf

8.3.2 Balancing Sustainability and Financial Independence

In the interview conducted with the CEO, GR recognizes that sustainable forestry is a long-term business and that actions taken today can have an impact many years in the future. Therefore, the company has adopted responsible forestry management practices, including sustainable harvesting and replanting, to ensure that its operations remain financially viable in the long run. Access to finance is also a challenge that GR has faced. In the case of GR, it means that the company may face challenges in securing sufficient funding to implement its forestry projects and operations. This can be due to various factors, including the risky nature of investments in the forestry sector, the high upfront costs of establishing plantations, and the limited availability of financing options in the regions where the company operates Additionally, access to finance can also impact the company's ability to implement sustainable forestry practices, as these may require additional investments in technology, equipment, and

training. However, the company recognizes that sustainability criteria are increasingly linked to access to finance, particularly for finance suitable for forestry (GR, 2022).

According to the CEO, GR's Mozambican operations are not yet financially independent and still require funding from other operations in the group. However, the company's Tanzanian and Ugandan operations are financially independent. The Tanzanian and Ugandan operations of Green Resources operate as separate entities and are financially independent from the rest of the company. This means that they are responsible for their own finances and investments, and do not receive direct financial support from the parent company in Norway. The separation of financial operations is reportedly due to the regulatory environment in these countries, which requires a local company to own the land and forestry operations. This financial independence also means that the Tanzanian and Ugandan operations are subject to separate audits and reporting requirements and may have different approaches to managing social and environmental risks compared to the parent company.

GR Mozambique recognizes the challenges in balancing financial sustainability with social and environmental responsibility. The company believes that it needs a Social License to Operate to achieve its mission and must ensure that it does not cause any environmental harm since the growth of its trees is dependent on the very environment that the company impacts (GR, 2022). The "Social License" concept refers to a company's acceptance by local communities, stakeholders, and other relevant parties. Green Resources recognizes the importance of obtaining a social license to operate in the regions where it operates. The company works closely with local communities and stakeholders to understand their concerns and interests and incorporates their feedback into its operations. This includes community development programs, education and healthcare initiatives, and engagement with local leaders and community representatives. obtaining a social license, Green Resources aims to ensure that its operations are economically, socially, and environmentally responsible, and respectful of the rights and needs of all stakeholders.

8.3.3 Resolving Land Rights and Promoting Community Engagement: Green Resources' Efforts in Mozambique

As pointed out by Lowery (2022), Green Resources has long-term leases on land that was once owned by communities, posing challenges to community and land rights. Green Resources has encountered difficulties in effectively managing the acquired landholdings. Green Resources

disinvested its land rights, releasing over 230,000 hectares of land in Mozambique, with support from USAID, local civil society organizations, and the Integrated Land and Resource Governance (ILRG) program. Over 86 communities obtained or applied for certificates of community land rights, benefiting more than 200,000 individuals. This process of land delimitation has reduced conflicts, enhanced accountability, and promoted transparency in resource utilization. The establishment of community land associations has emerged as a crucial mechanism for managing communal land and natural resources. Green Resources has actively provided technical support to communities, assisting them in resource management and sustainable livelihood development. Ultimately, this collaborative initiative aims to restore relationships, mitigate conflicts, and foster sustainable land and natural resource management practices in Mozambique (Lowery, 2022).

8.4 Green Resource`s Efforts in Combating Climate Change

In the interview with GR`s CEO, it was acknowledged that forest plantations cannot fully replace natural forests in terms of ecological value. However, GR sees the importance of productive plantations in meeting the demand for forest products while reducing pressure on natural forests. At present, according to GR, one hectare of forest plantations has the same productivity as 25 hectares of natural forests. program.

8.4.1 The Role of Green Resources in Carbon Credit Projects

GR has been involved in carbon credit projects since 2006. GR has sold carbon credits to various companies and organizations that are looking to offset their GHG emissions. According to the company's website, their customers have included airlines, shipping companies, oil and gas companies, and other organizations that have large carbon footprints (GR,202b). However, most of GR`s carbon credit sales occurred in the voluntary carbon market, outside the UN system. GR now exclusively uses the Verified Carbon Standard (VCS) for the voluntary market. Carbon revenues account for less than 3% of GR`s total income, and the company commits to reinvesting 10% of these revenues into local communities surrounding the carbon projects. It is noteworthy that Mozambique currently does not have a carbon credits program in place. However, according to GR is exploring the possibility of initiating a carbon project in the region. It is important to mention that this project is currently in the feasibility stage, and no final decision has been made on its implementation. It is unclear why Green Resources has not been able to implement a carbon credits program in Mozambique. However, one possible explanation could be that they are not yet financially independent enough to invest in the

necessary infrastructure and technology for carbon credits. Additionally, there may be regulatory or political barriers in Mozambique that are preventing the implementation of a carbon credits.

8.5 The Challenges and controversies surrounding Green Resources

In this section, the study will delve into the obstacles and controversies surrounding Green Resources, shedding light on the various issues that have emerged in relation to the company's operations. By examining these challenges, this section aims to provide a comprehensive understanding of the complexities and controversies surrounding Green Resources and their potential impact on sustainability, local communities, and the environment.

8.5.1 Facing Criticism and Concerns over Transparency and Environmental Impact

Green Resources' operations in Mozambique have both environmental and social consequences. There have been concerns about the impact of GR's operations on local communities, including land disputes and limited access to resources. GR has stated its commitment to responsible investment, but questions remain about the alignment of its operations with the company's mission and values. GR has faced criticism in the media for its operations across regions for more than a decade. The article published by NRK in 2023 highlights concerns raised by various experts about Green Resources. The article notes that the company has declined to provide its carbon footprint to the media and experts, which has raised questions about the company's willingness to be transparent about its environmental impact. Furthermore, the article mentions that Green Resources uses an internal carbon measuring system that has not been independently verified. This lack of independent verification has led to doubts about the accuracy of the company's carbon emissions reporting. The article also highlights concerns from environmentalists about the company's use of carbon credits, as the credits may not accurately reflect the environmental impact of its forestry operations. These concerns have led to accusations of greenwashing, further calling into question the company's commitment to responsible forestry practices and environmental stewardship (NRK, 2023).

8.5.2 Green Resources' Approach to Addressing Criticisms and Lessons Learned

In the interview conducted out for this study, the CEO says that GR addresses criticism of their social and environmental practices by being transparent, answering questions, and responding to comments. However, they prefer to engage in direct dialogues with parties that are critical

rather than using public platforms. It was also mentioned that GR has provided extensive input into recent NRK articles, although not all input was used. They believe that being open and humble about both their successes and failures and responding to questions asked is their approach to explaining their business. GR recognizes the importance of responding to concerns and taking action to address them. The company has adopted a responsible forestry management approach that includes conservation measures, water and soil protection, and other environmentally friendly practices. GR acknowledges that it is essential to continuously improve its operations while being transparent and open to feedback. The study finds that GR`s journey in the forestry sector has taught important lessons about the need to match ambitions with the ability to implement projects. The company`s initial ambitions led to the acquisition of landholdings exceeding its financial and operational capabilities, which resulted in negative attention and accusations of land-grabbing. Another lessoned learned is the importance of open dialogue with stakeholders, including the willingness to be humble about failures and successes.

8.6 Assessing the environmental aspect.

Both Kjetil Aas and Vigdis Vandvik were interviewed as part of this project to gather valuable insights on the environmental impacts of large-scale tree plantations and the effectiveness of financial instruments for climate mitigation. Kjetil Aas is a climate modeller focusing on how climate change affects the land. He has a master's and PhD in geoscience from the University of Oslo and a teaching degree in mathematics and physics. Vigdis Vandvik is a professor of biology at the University of Bergen in Norway and a member of the Norwegian government's nature risk committee. She is also a contributor to the work of the United Nations' Nature Panel. Vandvik is known for her research on plant ecology and conservation biology. Their perspectives and expertise provided valuable information for understanding the complex dynamics between tree plantations and the environment. Their insights are not solely focused on business or economic considerations but are grounded in their expertise in natural and mathematical sciences, offering a nuanced and comprehensive approach to responsible investments in the forestry industry. Arguably, when discussing the environmental aspects of Green Resources' operations, it is important to consider the viewpoints of experts from various scientific fields.

8.6.1 Understanding the Complexity of Large-Scale Forest Planting Projects

Aas highlights the importance of understanding the complexity of large-scale forest planting projects, particularly in relation to their climate impact. While acknowledging the potential significance of these projects as nature-based climate solutions, he emphasizes the need for thorough investigation to determine their true effectiveness for climate mitigation. He also emphasizes that calculating carbon sequestration alone is insufficient and that considering direct emissions from activities and soil, as well as comparing the project to the pre-existing conditions, is crucial for a comprehensive understanding of the climate benefits.

8.6.2 Hidden Costs and Climate

Both Vandvik and Aas points out the hidden costs associated with large-scale forest planting projects. Aas underlines that these costs include considering the impacts on soil and the biogeochemical and bio geophysical effects that can affect the overall climate benefits. It is emphasized that a holistic assessment is required, considering multiple effects beyond just CO2 emissions. This highlights the need for expertise and appropriate tools to accurately evaluate the climate impact of such projects. Vandvik argues that plantation forests selling carbon credits cannot be considered environmentally friendly due to their negative ecological consequences. Highlighting that these forests, typically consisting of a single tree species, result in biodiversity loss by providing limited habitat for native plants and animals. The use of agrochemicals and intensive management practices further impact soil quality, water resources, and ecosystems. These factors, including habitat disruption and reduced biodiversity, challenge the claim of environmental friendliness despite carbon sequestration benefits.

8.6.3 Responsibility of Companies in Nature Conservation

Companies like GR are regarded as having a great responsibility towards nature and the environment. Aas emphasizes the importance of open communication, transparency, and updating knowledge as advancements are made in understanding the effects of forest planting. Specific research for each region is emphasized, as knowledge gained from studies in different regions may not directly apply. Responsible decision-making and considering the broader environmental impacts beyond climate effects are crucial for companies operating in the forestry sector. Moreover, ecologist Vigdis Vandvik emphasizes the need for responsible decision-making and transparency in forestry companies' operations to preserve biodiversity and maintain ecosystem functions and services. She suggests the use of open data and a carbon

account that considers long-term carbon storage in ecosystems to assess the hidden climate costs of large-scale forest planting.

8.6.4 Advantages and Trade-Offs of Plantation Forests

Regarding the advantages of plantation forests, Aas highlights the potential for capturing more CO2 over time by harvesting timber and growing new forests at the same location. However, the climate effect of harvested timber depends on its subsequent use and the release of carbon into the atmosphere. Aas emphasizes the need to consider the carbon storage duration and the potential trade-off between carbon sequestration and preserving biodiversity. Vandvik raises concerns about the use of alien species for large-scale forest planting and the potential negative impacts on groundwater, fire risk, and carbon storage. Aas underlines that the use of other people's land in large-scale forest planting projects is acknowledged as a delicate matter. Arguably, it is important to responsibly evaluate the effects on local communities and their environment, considering social and biodiversity perspectives in addition to climate considerations.

8.6.5 Balancing Urgency and Research Uncertainties

Minimizing negative environmental consequences requires companies to be aware of their impacts beyond climate effects. Factors such as water availability, groundwater levels, and impacts on local ecosystems need to be considered. A case-by-case approach is necessary to understand and address these impacts effectively. Aas highlights the importance of research in understanding the full climate effects of forest planting projects, not just the CO2 effect. Comprehensive research is necessary to assess other climate impacts and the environmental effects on biodiversity. Trade-offs between carbon sequestration and biodiversity conservation need to be carefully considered. He argues that continued research, critical investigation, and collaboration with neutral parties are essential for advancing the knowledge and effectiveness of nature-based climate solutions. While uncertainties and research gaps exist, the interviewee emphasizes the urgent need to reduce CO2 emissions and compensate for them. Arguing that waiting for complete knowledge about the side effects of nature-based climate solutions may not be feasible within the given timeframe. Thus, Aas suggests that research should go hand in hand with the implementation of such projects, allowing for continuous improvement and informed decision-making.

8.6.6 The Importance of Preserving Existing Forests and Prioritizing Nature Conservation

In conclusion, both experts stress the need to prioritize preserving existing forests and prioritizing nature conservation. Their perspectives highlight the importance of understanding the full climate impact of such projects beyond economic benefits and emphasize responsible decision-making and transparency in forestry operations. Vandvik raises concerns about biodiversity loss and negative ecological consequences associated with plantation forests selling carbon credits. Aas emphasizes the need for comprehensive research, region-specific assessments, and a holistic approach to assess the hidden climate costs of forest planting. Both experts emphasize the importance of preserving existing forests, prioritizing nature conservation, and operating sustainably and transparently. Their insights underscore the need for continued research and open communication to fully understand the environmental impact of large-scale forest planting projects.

8.7 The Future of Green Resources: Opportunities and Challenges Ahead

GR faces both opportunities and challenges as it looks towards the future. GR states that they will continue to invest in their forests plantations to improve yields and quality of their trees. They are also committed to invest in industrial capacity to complete the circle of planting, harvesting, production and replanting. At present their industrial capacity is still limited and they believe that over the coming 5-10 years significant investments will be made in this part of the business. However, the company also faces challenges such as limited financial and operational capacity, negative attention and accusations of land-grabbing, and the ongoing impacts and regulations of climate change on its operations. To address these challenges, GR will need to continue engaging with local communities, implementing sustainable practices, and promoting transparency and accountability in its operations.

Currently, Green Resources' decision to return land in Mozambique while also planning to expand their operations has been met with criticism due to the apparent contradiction in their actions. While the return of land may be a part of their commitment to responsible land use and community engagement, it raises questions about the suitability of the land for their current operations or the areas they have identified for their expansion plans. The idea of returning land while simultaneously expanding operations can be perceived as a paradox and can lead to skepticism about the company's true motives. It is essential to have a thorough understanding

of the specific details of Green Resources' expansion plans and land return initiatives to evaluate the situation accurately. Balancing environmental, social, governance, and economic factors in a complex project like Green Resources requires significant resources and capacity, which may have been lacking in the company's past performance. A recurring theme in the field of tree plantations is the gap between planned initiatives and available resources, which can hinder capacity-building and implementation efforts.

8.8 The Role of Commercial Forestry in Combating Climate Change

Forestry has been increasingly recognized as a key tool in the fight against climate change, given its potential to sequester carbon and mitigate greenhouse gas emissions. CEO of GR believes that commercial forestry is one of the many approaches that can contribute to this effort and emphasizes the need for all approaches to work in tandem. GR highlights several benefits of commercial forestry, including its potential to provide biomass energy as a substitute for fossil fuels, offer sustainable sources of firewood and building materials, and promote the use of new building techniques that are more environmentally friendly. He also emphasizes the potential of commercial forestry to contribute to conservation efforts by protecting natural elements in the landscape and preventing erosion, as well as to develop forest projects in previously deforested areas to produce solid wood products and carbon credits.

The CEO acknowledges that the forestry sector faces significant challenges in Mozambique, including the availability of skilled labor, regulatory and fiscal frameworks, and ease of doing business. He also acknowledges the need for companies like GR to align their ambitions with their implementation capabilities. GR acknowledges that environmental management is an ongoing and evolving process that requires sustained investment. The company is currently evaluating several technical solutions, such as satellite monitoring and sustainability reporting tools, to improve their ability to monitor the impact of their operations and enhance their access to data. GR's commitment to environmental sustainability is further highlighted by their plans to commence the implementation of these tools in the forthcoming years.

When asked about advice for firms considering establishing tree plantations in the global south, the CEO stresses the importance of including an early revenue and industrial model in the development plan, rather than focusing solely on tree planting. Further, GR also highlights the need for more rigorous application of building standards and codes in the region, noting that

compliance is currently loosely regulated and stricter regulations would foster a more sustainable and responsible industry.

8.9 Green modernization or greenwashing: Navigating the fine line between sustainable practices and empty promises.

The establishment and operation of forest plantations in Africa, including in Mozambique, are increasingly being framed as a means of "green modernization" rather than simply modernization. To determine whether GR`s forest plantations in Mozambique represent "green modernization" or greenwashing, several criteria are relevant. These include the conservation of biodiversity, contribution to carbon sequestration, community engagement, compliance with environmental and social safeguards, and certification or verification by independent third parties. These criteria reflect the need for forest plantations to balance environmental and social sustainability with economic viability, and to maintain the long-term health and productivity of the forests. While GR's plantations may contribute to "green modernization" in Mozambique, their success will depend on their ability to meet these criteria and to ensure that the benefits of forest plantations are equitably shared among local communities and stakeholders. It can be difficult to say for sure what drives investors' interest in Green Resources or similar companies. Some investors may be motivated by a genuine interest in environmental conservation and sustainable investments, while others may view such investments as an opportunity to earn returns on their investments while also gaining a positive image. It is also possible that some investors may be attracted to both, both the financial returns and the positive impact on the environment. This raises the question of whether such initiatives truly promote sustainable practices or merely serve as a PR tool for companies seeking to improve their public image.

Chapter 9: Discussion

9.1 Summary of the findings

To summarize, the concept of Green Modernization presents African regions with an appealing opportunity for long-term economic growth and sustainable development. However, caution must be exercised during implementation to ensure that environmental concerns are prioritized. This includes avoiding environmentally exploitative behaviors and adopting sustainable ways that prioritize conservation, biodiversity protection, and natural resource preservation. African states can support sustainable development while reducing negative environmental impacts and building ecological resilience by incorporating environmental protections into the Green Modernization process. While the company has implemented various sustainable forestry

practices and conservation efforts, their operations have also had adverse effects on local communities and ecosystems. For instance, the company's large-scale tree plantations have displaced local communities, disrupted traditional land-use practices, and led to the loss of biodiversity.

Despite receiving criticism throughout its operations, Green Resources (GR) has made concerted attempts to operate in a transparent manner and to address the difficulties it faces. However, an apparent lack of accountability among the primary stakeholders raises questions about the extent to which these investors have performed extensive study and accepted their obligations as environmentally responsible investors. It may be argued that Norfund, as a key investor, has shown little interest in engaging in critical conversations and considering various points of view without getting defensive. Instead of fully utilizing Green Resources in a positive manner, Norfund appears to have taken a defensive attitude, rejecting criticism rather than viewing it as a chance for progress. Accepting critical feedback and actively participating in constructive conversations would be extremely beneficial in using criticism as a drive for progress. Stakeholders, including Norfund, can use criticism as a valuable resource for improving their methods and generating positive change by building an open and receptive environment. Such an approach supports continual learning, accountability, and builds an organizational culture of innovation and sustainability. The response “if we only knew what we know today” may be insufficient in justifying the actions taken.

Moreover, another concerning aspect of this situation is the apparent lack of robust scientific reasoning behind carbon credits and forest plantations in general. Given the urgent need to address climate change, there is no room for error in implementing green policies that may end up being counterproductive and “greenwashing” in nature, ultimately resulting in red, or negative, outcomes. While navigating the untapped market and being a leader in the forestry industry in Africa can be challenging, it is noteworthy that GR is promoted as a green company at its core and receives substantial economic support from governments for its investments when there is lacking proof of their actual environmental outcomes of its operations. GR should strive to uphold transparency to remain the leading forestry company in Africa.

9.2 Implications and Contributions to Theory and Practice

The study highlights the importance of considering environmental factors in investment decision-making processes in the forestry sector. The findings suggest that there is a need for

increased transparency, and stakeholder engagement in forestry investments, as well as a focus on long-term sustainability and impact. Overall, the study underscores the importance of balancing economic and environmental considerations in investment decision-making processes and the need for collaborative efforts among stakeholders. Overall, this study emphasizes the importance of integrating environmental considerations, enhancing transparency, and fostering stakeholder engagement in forestry investments.

Chapter 10: Conclusion

10.1 Recap of the problem statement and research questions

COP15 and the recent UN report on Climate change highlight the urgent need for global cooperation to address biodiversity loss and climate change. Efforts must be accelerated, and higher goals set for carbon emission reduction, sustainable practices, and ecosystem protection. Businesses worldwide play a crucial role in promoting sustainability and driving necessary changes. As highlighted in this thesis, the forestry sector presents significant opportunities for responsible investments that can generate both financial returns and positive environmental and social impacts. However, the sector also faces various challenges, such as environmental risks, land use conflicts, and regulatory barriers, which can hinder responsible investment practices.

10.2 Summary of the main findings and contributions

The findings of this research suggests that investors must prioritize environmental factors in their decision-making processes, with carbon sequestration and sustainable forest management practices being the most significant considerations. Moreover, investors should recognize the importance of engaging with local communities and stakeholders through responsible investment practices. The study explored the role of environmental factors in investment strategies and decision-making processes. The study identified several challenges and opportunities associated with responsible investments in the forestry sector, including the need for better data and reporting practices on environmental performance, and the importance of stakeholder engagement. There is a widespread belief that technological solutions and modernization are the key to addressing current environmental challenges. However, while the industry promotes its sustainability credentials, the underlying motivation appears to be economic, as it enables the industry to remain competitive and expand. As demand for green products and processes increases, it is important to ensure that regulations keep pace. In conclusion, there is a need for the forestry industry to move beyond simply aligning

sustainability with growth and instead embrace transformation towards a truly sustainable industry.

10.3 Limitations and future research directions

The study`s narrow focus on environmental sustainability may not fully capture the company`s social sustainability practices and impacts. Additionally, the study relied on publicly available information and interviews, which may not fully capture all aspects of the company`s sustainability practices and performance. To overcome these limitations, future research could conduct more in-depth assessments of Green Resource`s practices and performance through field observations and surveys and expand the scope of the analysis to include a more robust examination of the company`s social sustainability practices and impacts. Furthermore, future research could examine the potential trade-offs between sustainable forestry practices and other land uses or conservation priorities and analyze the economic and social benefits and costs of forestry practices for local communities and the broader economy. Additionally, given the potential for sustainable forestry to contribute to climate change mitigation and adaption at larger scales, future research could investigate the carbon sequestration potential of sustainable forestry practices and the potential trade-offs between forest management strategies. Further research is needed to understand the full extent of the environmental and social consequences of GR's operations in Mozambique and how the company can address these issues while achieving its business goals. Overall, it is important to take a balanced approach when considering the promotion of tree plantations as a solution to climate change, considering both the potential benefits for sustainable forestry and climate change mitigation, and the negative impacts on biodiversity, local communities, and ecosystem services.

10.4 Closing remarks

Businesses have a crucial role to play in addressing environmental challenges, and it is time to acknowledge that they can be both part of the problem and the solution. As we grapple with the complex challenges posed by a rapidly changing world and the pressing threat of climate change, it has become increasingly clear that investing Environmentally responsible is no longer just a matter of morality, but a strategic business imperative. Failure to prioritize sustainable investments may render companies vulnerable to the demands of an increasingly informed and conscientious consumer base, and ultimately undermine the long-term viability. In today`s global marketplace, transparency, and accountability in the face of environmental challenges have become fundamental to maintaining competitive advantage and securing

stakeholder trust. In short, we can no longer afford to view environmental responsibility as an optional add-on to our business operations. It is now an imperative for both the planet and our businesses, demanding that we embrace new ways of thinking and acting to build a sustainable future for generations to come. In the sustainability report, GR`s CEO emphasizes the significant undertaking of "building the future of Eastern Africa and beyond." This endeavor requires substantial resources and time and ensuring that it is accomplished sustainably presents a formidable challenge. Arguably, it is imperative that we adopt an open-minded and inclusive approach when it comes to pursuing green projects. We must acknowledge that there is no shame in prioritizing environmental responsibility in business decisions, and we must be open to debates and diverse perspectives. By creating space for multiple voices from different backgrounds, including environmental scientists, we can ensure a comprehensive and well-rounded approach to sustainable development. It is through such collaborative efforts that we can achieve meaningful progress in addressing the complex challenges of climate change and environmental degradation that we are all currently up against.

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Appendix

Appendix 1: Consent form for interview participants in the study

Are you interested in taking part in the research project

"Factors influencing environmentally responsible financial commitments: A qualitative examination of Green Resource's investment projects in Mozambique"?

Purpose of the project

You are invited to participate in a research project where the main purpose is to advance our comprehension of how corporations and investors make environmentally responsible financial decisions, with a specific emphasis on the investment ventures of Green Resources AS in Mozambique. This study's primary objective is to examine the processes and determinants of Green Resources investment in Mozambique's forest plantations. This study investigates the political, social, and economic issues and the investments in question to understand better the multiple layers of growing plantation forests in a sustainable and socially just manner.

The research questions:

1. How do investors in Green Resources AS view and prioritize responisble financial commitments, and how does these factors impact Green Resources operations in Mozambique?
2. What measures is Green Resources taking to improve the long-term sustainability of its forest operations in Mozambique? How do these measures conform to existing environmental norms?

This is a Master`s thesis.

Which institution is responsible for the research project?

Norges miljø og biovitenskapelige universitet (NMBU) is responsible for the project (data controller).

What gives us the right to process your personal data?

We will process your personal data based on your consent.

Based on an agreement with Norges miljø og biovitenskapleige universitet The Data Protection Services of Sikt – Norwegian Agency for Shared Services in Education and Research has assessed that the processing of personal data in this project meets requirements in data protection legislation.

Where can I find out more?

If you have questions about the project, or want to exercise your rights, contact:

- *Norges miljø og biovitenskapelige universitet*
- Our Data Protection Officer: Jan Olav Aarflot

If you have questions about how data protection has been assessed in this project by Sikt, contact:

- email: (personverntjenester@sikt.no) Or by telephone: +47 73 98 40 40.

Yours sincerely,

Project Leader	Student (if applicable)
(Researcher/supervisor)	Henrikke Vikøren Zachariassen

Henrikke Vikøren Zachariassen

Consent form

I have received and understood information about the project Master thesis and have been given the opportunity to ask questions. I give consent:

Why are you being asked to participate?

You are being invited to take part because you are connected to the operations of Green Resources in Mozambique, either as a participant or in some other capacity.

What does participation involve for you?
If you decide to participate in the project, it will require me to conduct an interview, either in person or via Zoom. Your responses will be electronically recorded. All participants will remain anonymous and referred to by their institutional name.

Participation is voluntary
Participation in the project is voluntary. If you chose to participate, you can withdraw your consent at any time without giving a reason. All information about you will then be made anonymous. There will be no negative consequences for you if you chose not to participate or later decide to withdraw.

Your personal privacy – how we will store and use your personal data

We will only use your personal data for the purpose(s) specified here and we will process your personal data in accordance with data protection legislation (the GDPR). I will erase the recorded interview once it has been transcribed, and only I will have access to the complete recording. Your name and contact information will be substituted with a code. The list containing the codes, names, and contact information will be kept separate from the rest of the gathered data.

What will happen to your personal data at the end of the research project?

The project is scheduled to conclude on May 15th, 2023. The personal information will appear in my master's thesis, which will be published. However, as previously stated, all data will be anonymized, making it impossible to trace the data back to an individual. The responses will be labeled with the institutional names of the participants.

Your rights

So long as you can be identified in the collected data, you have the right to:

- access the personal data that is being processed about you
- request that your personal data is deleted
- request that incorrect personal data about you is corrected/rectified
- receive a copy of your personal data (data portability), and
- send a complaint to the Norwegian Data Protection Authority regarding the processing of your personal data

Appendix 2: Conversation questions with Lars Ekman

1. What is Norad's view on Green Resources AS's forest plantations in Mozambique and their contribution to climate change mitigation?

2. How does Norad assess Green Resources AS's handling of local stakeholders and communities in Mozambique, and has Norad expressed concerns about any negative social or environmental impacts of their operations?
3. How has Norad collaborated with other organizations and stakeholders in Mozambique to promote sustainable development, and has Norad collaborated with Green Resources AS in this context?
4. What is Norad's view on Green Resources' compliance with relevant national and international standards and guidelines for forest management, and how does Norad follow up on their work in this area?
5. Can you provide examples of specific measures or projects that Norad has supported or financed in Mozambique aimed at combating climate change and promoting sustainable development, and how can this work complement or challenge Green Resources' operations in the country?
6. What do you think was Green Resources' motivation for investing in forest plantations in Africa, and how has their presence impacted local economies and communities?
7. How has Green Resources addressed the challenges of sustainable forest plantation management in Africa, and what measures have they taken to minimize any negative social or environmental impacts of their operations?
8. What does Norad consider to be the biggest challenges of sustainable development in Africa, and how can companies like Green Resources contribute to overcoming these challenges?
9. What guidelines or standards does Norad recommend for ensuring sustainable forest management in Africa, and how has Norad contributed to strengthening these standards and ensuring compliance with them?

10. Can you provide examples of projects or initiatives that Norad has supported or financed in Africa aimed at promoting sustainable forest management and reducing deforestation, and how can these initiatives complement or challenge Green Resources' operations in the region?
11. Can you share your opinion on the attention Green Resources has received in recent years, and whether you believe the criticism against them is justified?

Appendix 3: Interview with Green Resources CEO Hans Lemm:

Interview Green Resources AS

The purpose of the interview: The purpose of the interview with Green Resources is to gather information about their investment projects in Mozambique and to examine the factors that influence their environmentally responsible financial commitments. Through the interviews, I can gain insights into how Green Resources approach environmental sustainability in their investment decisions, what strategies they employ to ensure responsible financial commitments, and how they navigate the challenges and opportunities of investing in Mozambique. The information gathered from the interviews can be used to help answer my research questions and provide valuable insights into the factors that influence environmentally responsible financial commitments in the context of Green Resource's investment projects in Mozambique.

Topics I want to cover:

- → Financial viability and responsibility
- → Risk management
- → Social and environmental impact
- → Transparency and accountability
- → Collaboration and alignment with development goals

Category	Questions
Green Resources' sustainability goals and initiatives	
	What are Green Resources' plans for improving its environmental and social performance in the future, and how does the company prioritize its sustainability initiatives?
Sustainable forestry and alternatives to monoculture plantations	
	What is the company's response to concerns about its use of monoculture plantations, which can have negative impacts on biodiversity and soil health, and what alternatives is it considering?
	What role does Green Resources see for itself in promoting sustainable forestry and contributing to global efforts to combat climate change?
Learning from past experiences	

	What lessons has Green Resources learned from its past experiences, and how does it plan to apply these lessons going forward?
Response to criticism and efforts to address environmental and social concerns	
	How does the company respond to criticisms regarding its social and environmental practices, and what measures has it taken to address them?
Financial viability and responsibility	
	How does Green Resources AS ensure that its investments are financially viable while also being socially and environmentally responsible?
	Could you describe any challenges or trade-offs that Green Resources AS has faced in balancing financial sustainability with social and environmental responsibility, and how you have addressed them?
	How does Green Resources AS ensure that its investments align with international standards and best practices for responsible investment?
Risk management	
	Could you describe Green Resources AS's approach to risk management, particularly in relation to its investments in sustainable forestry and land use?
	How does Green Resources AS integrate climate risk into its investment decisions, and what strategies do you use to manage this risk?
Social and environmental impact	
	How does Green Resources AS measure the social and environmental impact of its investments, and what metrics do you use to evaluate success?
	How does Green Resources AS ensure that the benefits of its investments are shared equitably with local communities, particularly in areas where access to resources may be limited?
Transparency and accountability	
	What steps does Green Resources AS take to ensure transparency and accountability in its financial commitments, both to investors and to local communities?
Collaboration and alignment with development goals	
	How does Green Resources AS work with local governments and other stakeholders to ensure

	that its investments align with broader development goals and priorities?
	Looking ahead, what is Green Resources AS's vision for its responsible financial commitments, and what steps are you taking to achieve this vision?
Conclusion	
	Thank you for your time and insights!
	Take the opportunity to add any additional comments or information they feel is important for your research

Appendix 4: Interview questions with Aas and Vandvik:

Aas Interview:

Q1. What concerns do you have around large-scale forest planting projects?

Q2. What hidden costs are there in such projects?

Q3. What responsibility do companies like GR have towards nature?

Q.4 Hans Lemm says that plantation forests have their advantages, what do you think about this?

Q5. How can forest companies like GR take greater responsibility for preserving nature and minimizing negative environmental consequences?

Q6. How can research on forest planting and climate costs contribute to improving practices and policies related to forest planting as a climate measure, and what are some potential measures to reduce hidden climate costs?

Q7. When we talk about this, there are still many uncertain aspects and we don't know much. Should we then avoid engaging in such projects until we know more about their effects?

Q8. The fact that we use other people's land in such operations, does that make the matter more delicate?

Q9. Any closing remarks?

Vandvik interview:

1. What concerns do you have regarding large-scale forest plantation projects like Green Resources?
2. You mention that in many cases, the overall climate balance can be negative when it comes to forest planting. Could you elaborate on this further?
3. How does the removal of existing vegetation and the use of machinery in the preparation for forest planting impact the climate?
4. Why can it take many years before newly planted forests provide climate benefits, according to Vandvik?
5. What hidden climate costs are associated with large-scale forest plantation projects?
6. You also highlight the importance of considering carbon storage in the soil, which is often overlooked. Could you elaborate on this further?
7. What responsibilities do forest companies like Green Resources have regarding nature, and how do you believe they should act to fulfill these responsibilities?
8. Green Resources chooses to plant large amounts of eucalyptus, which can affect water availability in drought-prone areas. What are your thoughts on this choice?
9. Green Resources CEO, Hans Lemm, states that plantation forests have their own advantages, such as faster tree growth and the ability to meet increased demand for timber products. What are your thoughts on this?

10. How can forest companies like Green Resources take greater responsibility for conserving nature and minimizing negative environmental impacts of large-scale forest planting, such as water consumption, fire risk, and deforestation of natural beauty?
11. How can research on forest planting and climate costs contribute to improving practices and policies related to forest planting as a climate measure, and what are some potential actions to reduce the hidden climate costs of large-scale forest planting?
12. What methods and tools can be used to assess the hidden climate costs of large-scale forest planting, and how can they contribute to improving our understanding of the overall climate impact of such measures?

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